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WHOLE No. 3131

NEW YORK, SATURDAY, MARCH 9, 1918

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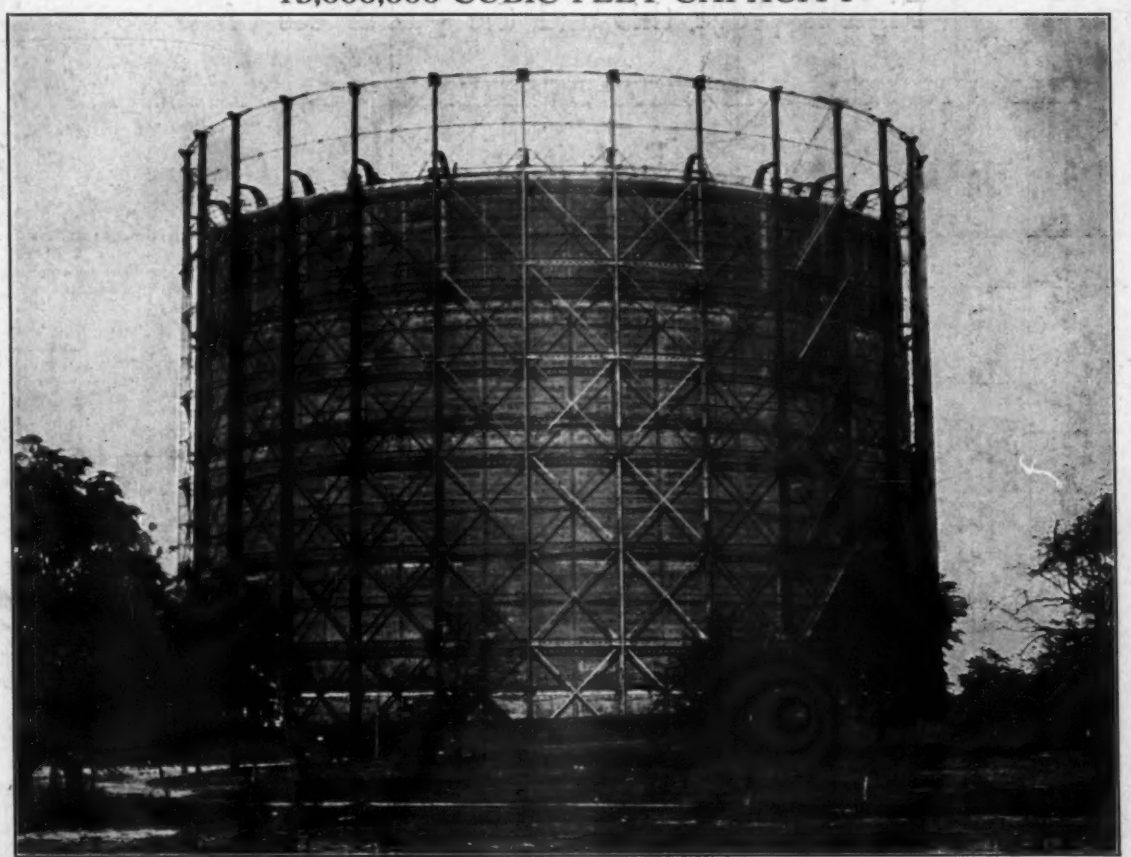

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AMERICAN
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Experience of Dwellers in Single-Family Houses During Past Winter an Evidence of What Can Be Accomplished with Minimum Heating Equipment Using Gas

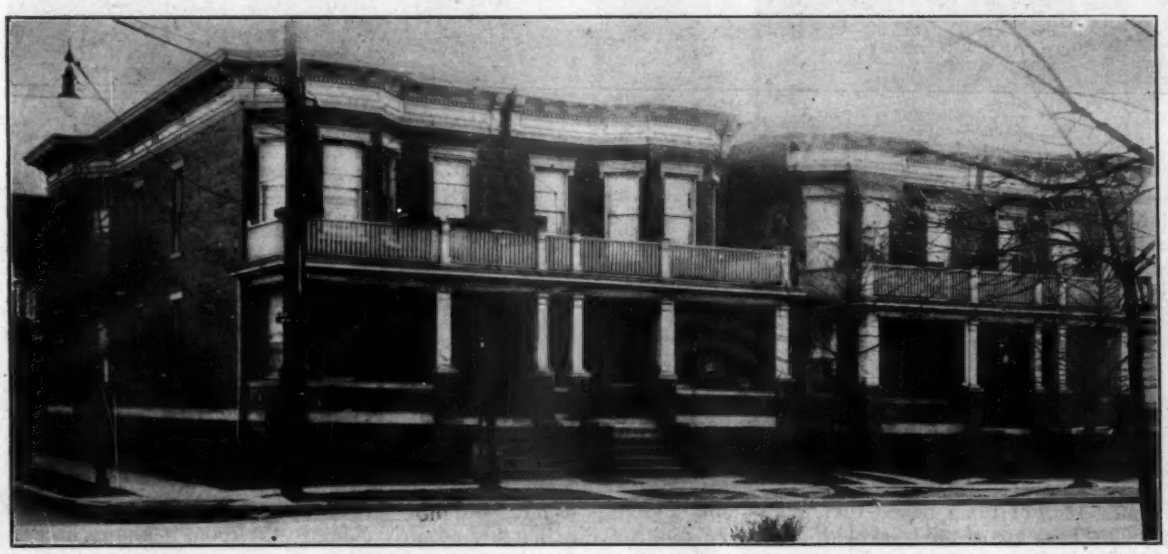
Average Consumption in Group of 6-Room Houses Little Over 5,000 Cu. Ft. Monthly, Including Lighting — Only Auxiliary a Combination Coal and Gas Range in Kitchen — Other Dwelling Equipped with Steam Heating Plant Forced to Rely Entirely on Gas Due to Lack of Coal Uses from Ten to Eleven Thousand Cubic Feet a Month

By EDWIN DEAN

Impressed, even before the advent of coal supply difficulties, with the advantages of gas for heating small houses, a builder of homes in Astoria, L. I., New York City, has in the working out of his plans evolved a heating scheme that has in it great possibilities for the gas companies.

In his original homes he equipped each dwelling—all six rooms and bath brick buildings—with a combination gas and coal range in the kitchen and a mantle fireplace type of gas heater in the parlor.

The heater selected utilizes the Argand burner principle, and its manufacturer claimed for it an unusual length of heat travel and an exceptionally high efficiency due to the fact that so near to perfect combustion is obtained as to make a flue connection unnecessary, with the result that all the heat developed is



BUILDINGS CONSTRUCTED AND OWNED BY HARRY SCHMIDT IN WHICH SOME DWELLERS, DUE TO LACK OF COAL, WERE FORCED BACK ON GAS EXCLUSIVELY FOR HEATING

thrown into the space to be heated. The builder satisfied himself of the accuracy of this claim, and was influenced besides by the selection of the first group of buyers who were given the option of having this particular heater or another installed, and decided upon the type in question for all his houses.

Heating the Upstairs Rooms from the Parlor

He expected to utilize the "heat-throwing"—as it might be termed—ability of the gas heater, and placed it so that it faced an open door into the hall, calculating that the heat directed there would be carried upstairs to the bedrooms. These expectations, according to the expressions of the buyers of the dwellings, have been realized, and even under the test of the recent severe winter the quantity of heat supplied has been sufficient to satisfy, yet the gas consumptions have averaged little more than 5,000 cu. ft. monthly, including lighting and the gas used in the combination range.

HARTLEY HOMES, DESIGNED WITH THE INTENTION OF USING GAS AS PRINCIPAL HEAT

Designing the Building to Best Utilize the Heating Plan

The dwellings were constructed by the Hartley Homes, Inc., of Long Island City, N. Y., and sold for $3,500. They are of red brick with white trim, and consist of a kitchen, bathroom, dining room, parlor, three bedrooms and closet space. The area of the cellar is 600 sq. ft.

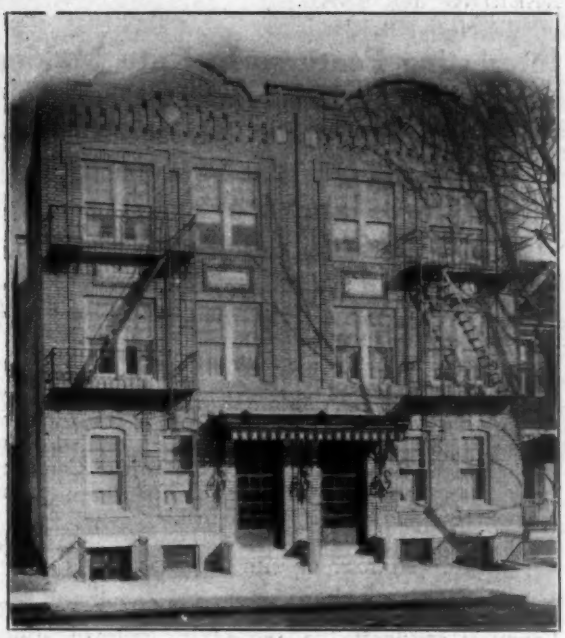
Profiting by the experience with the first group of dwellings, a second group constructed on the opposite side of the street were designed especially with a view to still further utilizing the heating plan employed in the first to better get the effects from the gas heater into the rooms in the upper floor. The stairway leading to them is directly opposite the heater and in a line with it, though in the hallway, and is supposed to act as a funnel to draw the heat rays up. The upper hall is a small space located in the middle of the building and the rooms open on to it obliquely. This scheme in the practical working out has borne out the original surmise.

Planning the Family Life to Save Fuel

As will be judged by the price of the dwellings and the size of the gas consumption, the people who own these homes are of the kind which, while able and willing to pay what is necessary to insure health and comfort, will exert themselves to the degree of following a plan to save unnecessary expense.

It is their practice to take a trip upstairs a short time before going to bed and opening the bedroom doors leading into the hallway. In the interval between this action and actually going to the room it attains a comfortable temperature.

The plan of supplying all the heat necessary for a family from one gas heater had been tried out before.



APARTMENT HOUSES IN WHICH, DUE TO LACK OF COAL, GAS WAS USED FOR THE ENTIRE HEATING

On page 113 of the Feb. 21, 1916, issue of the AMERICAN GAS LIGHT JOURNAL there was described an apartment house completely dependent upon gas for heating, with the exception of that part which might come from the coal fire in a combination range in the kitchen, which had been occupied more than a year. The individual apartments are heated after a plan similar to that described in the case of the Hartley Homes.

Here, too, we have very low gas bills and satisfied dwellers, as is attested by this letter written less than a month ago by their builder and owner:

"A little over three years ago I equipped thirty-two apartments on Putnam Avenue with your ——— heaters. A year later I equipped fifty-one apartments on Linden Street, near Evergreen Avenue. One is installed in the dining room, which takes care of the living room and bedroom, the kitchen being equipped with a combination gas and coal range. The halls are heated by a 'Perfecto' heater placed on the first floor.

"As many of the tenants had never depended on gas for principal heat, they used it very sparingly, and the gas bills only average about $2.50 per month for each apartment. After a few months' experience they began to use the gas more freely, and the gas bills for the colder months of winter average from $4 to $6 per month, which includes gas used for lighting and cooking.

"The service from this system has been most satisfactory to the tenants and myself, as it eliminates the vexing problem of securing a competent janitor for the care of a central heating plant, and leaves the tenant independent to regulate the heat to meet his own requirements. It will be of interest to know that I have always had a waiting list on both of these apartments, as compared with vacancies in steam-heated apartments in the same locality; also that I had never any trouble in holding tenants during summer months, which does occur in steam-heated apartments owned by me. My experience is also that apartments with this equipment can be sold more readily, and what is more important, loans and mortgages are approved with less trouble.

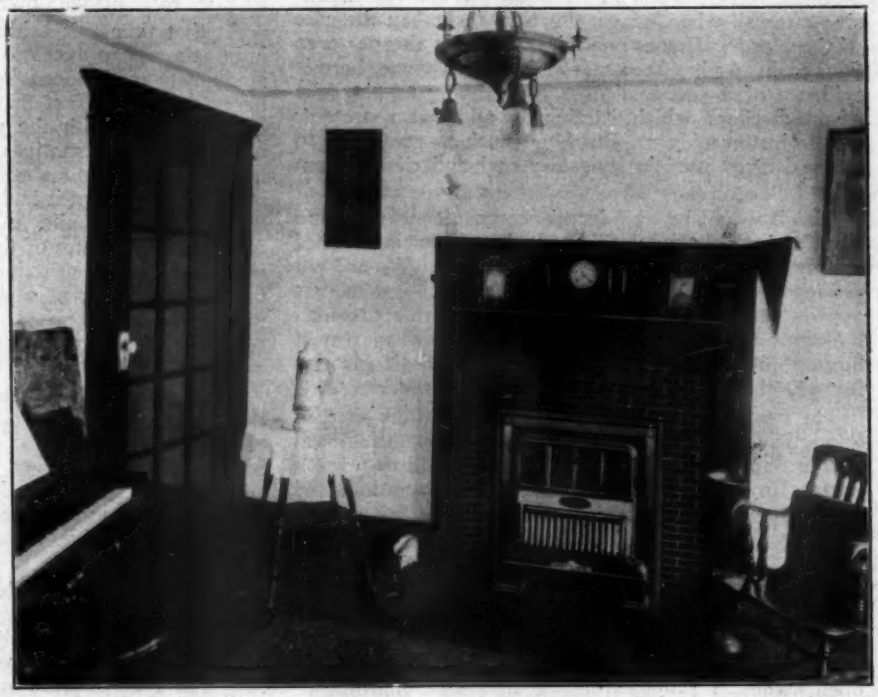
"With several years of practical test of your heaters, it affords me great pleasure in giving my unqualified endorsement.

"(Signed) CHARLES WEBER,
"Owner and Builder."

Another evidence of the slight cost of heating exclusively by gas in a latitude where severe winters are experienced where the user is interested in keeping the bills as low as consistent with comfort and hygiene is presented in a group of houses constructed and rented by Harry Schmitt, in Brooklyn, New York City.

LACK OF COAL MAKES FAMILIES ENTIRELY DEPENDENT UPON GAS

These houses have five rooms and a bath, and were equipped with steam-heating plants. Coal shortage



AN INTERIOR VIEW IN A HARTLEY HOME SHOWING PLACING OF GAS HEATER

A ROW OF APARTMENTS WHERE GAS PLAYS AN IMPORTANT PART IN THE HEATING PLAN

forced some of the dwellers back on gas heating exclusively. The consumption in these cases averaged from six to eight thousand cubic feet per month, including cooking and lighting.

The instances cited are but a few of a number in which similar experiences have resulted.

In the writer's opinion they reveal a new angle from which to tackle the "gas-exclusively" house-heating problem. Gas for this purpose does not seem so expensive after all when we get down to facts. In the case of the Hartley Homes one might say it is cheaper even than coal. As has been stated, in this instance there is evidence of a certain degree of planning on the part of the dwellers, which, it might be adduced, represents a little inconvenience. But how much as compared to the real labor used in shoveling coal and cleaning out ashes?

Also it would be well for gas companies to read into Mr. Weber's letter deeply. It has been introduced merely to bring out a point in this article. We are not dealing here with apartment-house heating. But the gas man is, and there are a few points that this practical builder brings out that might mean more apartment houses built with the intention to heat by gas, if gas men brought them to the attention of other builders.

The gas heater employed in the installations cited in this article are of the "Solar Grand" type, manufactured by the Sanitary Heating Company, 233 Thirty-seventh Street, Brooklyn, N. Y., to whom the writer in indebted for photographs used in the presentation of this article.

Accident That Might Have Been Prevented

A well-known gas company is now being sued for $5,000 damages by a man who fell into a manhole. It is claimed by the defendant that the manhole was left open without a railing around it or a man guarding it. Rather severe bruises about the head and limbs are the result. Applying the "Safety First" principle might have prevented it.

Interesting Features In Rate Making Brought Out In Reversing Decree of Maryland Public Service Commission On the Havre de Grace and Perryville Bridge Company Rate Case

Question of the Commission's Power to Direct Financial Policy of the Company—Salaries to Officers—The Return Should Be On Present Value of Property

The opinion recently laid down by Judge Stockbridge, of the Court of Appeals of Maryland, in reversing the decree of the public service commission of that State in the Havre de Grace & Perryville Bridge Company rates case—abstracted in part as follows—presents many interesting points in rate-making.

History of the Company

A little over forty years ago the P., W. & B. R. R. Company constructed a single-track railroad bridge across the Susquehanna River, for the passage of its trains between the points of Havre de Grace and Perryville. The bridge was the type then in vogue, namely, of wooden truss construction, supported by a series of piers built up from the bed of the river. Some years later, in order to give greater stability to the structure, the wooden trusses were replaced by wrought iron ones, and the bridge continued to be used by the P., W. & B. R. R. and its successor, the P., B. & W. R. R. Company, as a railroad bridge down to about ten years ago.

At that time this bridge, which had been originally built at a cost in excess of $2,000,000, was found to be inadequate to the needs of the railroad company, both by reason of the fact that it was a single track bridge only and that with the growth of travel the greater weight of the locomotives and freight continually passing over it brought a strain upon the construction of the bridge greater than it had been designed to carry when it was originally built. Assent was thereupon obtained from the Legislature of the State and the War Department for the construction of a double track railroad bridge, paralleling at a distance of about 150 ft. the bridge theretofore used. The grant of the right to construct a new bridge was coupled with a requirement for the removal of the earlier bridge.

There was at that time no highway bridge crossing the Susquehanna River at this point, nor at any point nearer than Conowingo, some 10 or 12 miles further up the river, and it was felt that it would be a great advantage to persons residing in Havre de Grace and Perryville, when the original bridge should be abandoned as a railroad bridge, to have it converted into a highway bridge.

An endeavor was made to interest both county and municipal authorities on each side of the river to undertake the conversion and maintenance of the bridge, which they declined to do, apparently because apprehensive that the revenues which would be derived from tolls would be inadequate, both to effect the necessary adaptation of the railroad bridge for use as a highway bridge and the upkeep of it after it had been so adapted.

In this condition a charter was granted by the Legislature to certain gentlemen resident in Harford and Cecil Counties, creating a bridge company, authorizing the acquisition by the company of the bridge, and its administration, with the right to charge tolls for the use thereof, conditioned only that the rates of toll should not be in excess of those charged by the company owning and operating the Conowingo bridge, and which was a much shorter structure.

Unforeseen Increase in Business

The seven gentlemen named in the charter affected a corporate organization, each subscribing and paying for one share of stock of the par value of $100, and after negotiating with the railroad company, the railroad company, at a cost of $89,000, adapted the bridge for use as a highway bridge and turned the same over to the bridge corporation, which thereupon issued its stock to the several incorporators in an aggregate amount of $50,000.

The bridge company expended a small sum of money, approximately $1,700, in the erection of toll houses, bridge approaches and some other items, none of which were very large in amount. It also established rates of toll for the various classes of traffic over the bridge, from foot passengers to motor trucks, and at rates less than those in force at the Conowingo bridge, which by its charter were the maximum the new bridge company was authorized to charge.

For the first two years after the structure had been thrown open to travel as a highway bridge the revenues were inconsiderable, the gross revenue being from six to seven thousand dollars per annum. Two factors then combined to cause thereafter a great increase in the gross revenue of the bridge, amounting for the year 1916 to somewhere between $58,000 and $60,000. These two factors were the sudden development and use, for both pleasure and business, of automobiles, the tolls from which constituted about 90 per cent of the gross revenues of the bridge, and second, the gross receipts were augmented to a considerable degree by the development of the State system of good roads, which brought this bridge directly upon the line of travel from Baltimore to Philadelphia and points north.

It was this sudden increase in revenue, entirely unforeseen at the time that the bridge company was formed, which seems to have suggested to certain persons, residents of Harford and Cecil Counties, that the rates of toll which were charged were excessive, and called for an investigation of the bridge company by the public service commission, and a reduction of the rates of toll.

This litigation is the outgrowth of that investigation, which resulted in a reduction of the rates of toll to be charged, for the period of five years from October, 1916, of fully one-half, the idea of the commission being that it had reduced the income of the company about 48 per cent, while the company's contention is that the reduction amounts to 72 per cent. Upon the entry of the commission's order making the reduction, application was made to the Circuit Court No. 2 of Baltimore City to declare the action of the commission void, as being unlawful, unreasonable and confiscatory. That court, after full hearing, and with a large amount of expert testimony before it, dismissed the bill of the bridge company, and it is from that action that this appeal has been taken.

At the threshold of this case is the consideration, whether the order of the commission comes within the scope of the powers granted to it by the Legislature, or whether it exceeds those powers, and for that reason is null and void.

Powers of the Commission

So far as the power to fix rates is concerned there can be no question under the language of the act that such power was granted to the commission. The order, as made by the commission, goes further than this, and requires the bridge company to establish and maintain a "main depreciation reserve account," and annually to make a deposit of a specified sum to the credit of such account, which fund is required to be deposited in some safe depository paying not less than 3 per cent per annum, compounded not less than annually, or by said directors invested in some safe investment paying an equal or higher rate of interest, the investment in either event to be subject to the prior approval of the commission."

In corporations which have a bonded indebtedness, it is frequently a stipulation of the contract that a similar course shall be followed, the fund so to be accumulated being ordinarily called a sinking fund, but that is a matter arising out of contract stipulations or agreement, not because of any mandate of public authority. Other corporations maintain under various designations reserve accounts, created by the corporation as a matter of corporate policy merely. With the wisdom of the creation and maintenance of such reserve there is no concern in this case. The bridge company has no bonded indebtedness. The only question is, is the commission invested by the Legislature with the power to direct and control the financial policy of this company?

The same question was presented to this court in Laird vs. B. & O. R. R. Co., 121 Md. 179, and it was there held that extensive as were the powers granted to the commission, they did not take away from the corporation its power of control upon a question of financial policy. The same question was raised in Binghamton L., H. & P. Co. vs. Stevens, 203 N. Y. 7, where the grant of power to the public service commission was very similar to that contained in our act of 1910, and the court in that case said: "The discretion of a public service commission cannot override the discretion of the officers of a corporation in the management of its affairs."

In the earlier case of the D. & H. Co. vs. Stevens, 197 N. Y. 1, the court has said: "We do not think the legislation alluded to was designed to make the commissioners the financial managers of the corporation, or that it empowered them to substitute their judgment for that of the directors or stockholders of the corporation."

In P. S. C. vs. Un. Hy. El. Co., 126 Md. 495, this court, speaking through Judge Burke, says: "If an order complained of is not within the scope of the authority conferred by law upon the commission, it is unlawful, and it is the duty of the court when applied to to restrain its enforcement."

That portion of the order of the commission, therefore, which required the bridge company to set up and maintain a main depreciation reserve account, and de-

posit to the credit of it a fixed annual amount, was clearly without warrant of law, and void.

The commission was given the power to direct how the accounts of the company should be kept, but such power does not include the power to prescribe a fixed sum to be charged or credited to a particular account annually. That is either a subject of contract, or a matter of the fiscal policy of the company.

Question of Salaries

While the order is silent upon the question of the payment of certain salaries, it is clear from the opinion filed by the public service commission, and upon which its order is based, that the commission intended in effect to limit the amount of salaries to be paid to certain officials of the bridge company. It is true that the opinion does not say that these officers shall not receive any greater compensation than that referred to in the opinion, but intimates that if a higher compensation is paid to them it cannot be regarded as a proper charge against the receipts of the bridge company, but should be paid apparently by the individual stockholders. Inasmuch as the services for which the salaries are paid are to be rendered to the corporation, as a corporation, it is hard to understand why the salaries for the performance of the services should not be paid by the corporation. Indirectly, of course, the question of salaries enters into the question of rate-making, since the larger the aggregate amount of salaries paid, the less will be the net revenue derived from the tolls, applicable to dividends for the stockholders. Therefore, in this regard the public service commission, by its order, undertook by indirection to direct the financial management of the company.

It is not intended in what has been said to intimate that under no circumstances have the public service commission the right to treat an allowance of salary as an improper charge by the corporation; undoubtedly where there has been a flagrant abuse of such power the public service commission may intervene, but the record in this case is entirely devoid of anything to show that the power of the directors to fix the salaries of the officers of the company has been in any way abused. In this regard, therefore, the effect of the order of the commission is undoubtedly to interfere with the financial management of the company, and what was said with regard to the main depreciation reserve account is equally applicable here.

The next question which presents itself is as to the scope and nature of the power of the court in dealing with cases of this character. There have been numerous decisions with regard to this, but nowhere is the proper rule of law better or more clearly stated than in the Public Service Commission vs. No. Cent. Ry. Co., 122 Md. 388. In a very comprehensive and painstaking opinion prepared by Judge Thomas, this aspect was disposed of as follows: "The power of the commission to fix reasonable rates is legislative, the functions of the court in reviewing the actions of the commission are distinctly judicial and exercised only for the purpose of determining whether such action of the commission is unreasonable or unlawful."

Under Section 460, Code, Article 23, the burden of proof is imposed upon the parties adverse to the commission to show by (quoting from the same opinion) "clear and satisfactory evidence that the determination, requirements, direction or order of the commission complained of is unreasonable or unlawful as the case may be. Upon an application to the court for an injunction restraining the execution of an order of the commission, the court has no authority to determine what would be a reasonable rate for the service required, or to establish rates, but its power is limited to the determination of the question whether the rates fixed by the commission are unreasonable or unlawful, and until it is made to appear by clear and satisfactory evidence that the action of the commission is unreasonable or unlawful, the court is without power to impose any restriction upon the execution of the commission's order." There remains but the single question, whether the rates fixed by the commission have been shown to be unreasonable.

The original petitioners to the commission seem to have proceeded on the theory that as the bridge cost the incorporators but a very small sum, and as its receipts had been more than sufficient to defray the operating expenses and repay the original outlay, that because it was a public highway, they were entitled to have the use of it for merely a nominal sum. The statement of so extreme a proposition is a sufficient refutation, and was so regarded by the commission.

A different view was that held by Lord Chancellor Selborne in Canada Tr. vs. Int. Bridge Co., L. R. 8 App. C723, where he took the ground that for the establishment of a rate the proper measure was the value of the service rendered to the individual who might avail himself of it. While to some extent this is true, unqualified assent cannot be given to it, because the value of the service, though identical in character, may be far greater to one individual than to another.

Valuation

There have been many cases dealing with the reasonableness of rates, and that is the vital question in this case. In these various cases a few have attempted to lay down a rule of what was, and what was not, a reasonable rate, but all such cases are in some respects unsatisfactory, because as, was well said in Kennebec Water District vs. Waterville, 97 Maine 185: "The conditions surrounding properties are so variant that it is difficult, and in some particulars impossible, to lay down rules of value which will apply to all cases without modification." See also Ames vs. Un. Pac. Ry., 64 Fed. 178.

There were one or two matters insisted upon at the argument which can readily be disposed of. Thus, the counsel for the public service commission urged strongly that the great increase in the revenues of the bridge was to be attributed to the construction of a State highway leading directly thereto. This argument is simply making use of a portion of a circle, for while it is undoubtedly true that the construction of the State highway has contributed materially to promote travel across the bridge, and so increase the tolls collected by the company, it is also true that but for the bridge the State highway would in all probability have been differently located, so as not to come to a dead end when the river was reached. Both the bridge and the highway have been separate factors operating concurrently to a single end, and it is impossible to ascribe preponderance in favor of either. The one acts as an offset of the other.

Both in the argument and in the brief filed on behalf

of the public service commission, there was used, probably by inadvertence, an expression calculated to mislead, namely, the value of the property of the bridge company *for rate-making purposes*. The provision for the valuation of the property of a corporation, subject to the public service law, is found in the Code in Article 23, Section 442, where the commission is empowered to "ascertain the fair value of the property of any corporation subject to the provisions of this sub-title." That and that only is the valuation which the public service commission is authorized to ascertain, and it would tend not only to work an injustice, but to render absurd a proposition that the property of a public service corporation might have one value in fact, another for purposes of rate making, and a third for purposes of taxation, in the absence of statutory provision such as obtains in some States, that for taxation purposes property is to be assessed at only a given percentage of its real value. What the commission in this case was authorized to ascertain under the section referred to was the *fair value* of the property.

In the rate-making cases reported different starting points have been taken, and the weight accorded to the several factors which enter into such a question have varied greatly. In some that which had most weight with the commission was the question of the net earnings of the corporation, but "the fact that the net earnings of the carrier may be large, does not of itself justify us in fixing a rate at less than is reasonable for the service, all other things being considered." R. R. Commissioners vs. Ill. Cent. R. R., 20 I. C. C. 181. This suggests a question, does the reasonableness of valuation depend on the income derived, or the reasonableness of the rate depend on the valuation fixed? The only case which has attempted to give a direct answer upon this point is the Kennebec Water District vs. Waterville, supra, and is to the effect that the reasonableness of the rates is dependent upon the value of the property.

No direct parallel can be drawn between a private corporation and a public service corporation, for the reason that to a greater or less extent the public has acquired an interest in the use of the property devoted to public use, and correlatively the company owes a duty to the public as well as to its stockholders, and must charge no more than a reasonable rate for the service rendered.

In reaching this there are many factors to be considered. A partial enumeration of these would include the value of the property employed, the value of the service rendered to the user, whether or not the corporation enjoyed a monopoly; the rate of return which should be made to the stockholders after the payment of operating expenses, upkeep and fixed charges; a reasonable allowance for depreciation, whether or not the utility is in operation or in fieri; the risk incurred by those who began the undertaking, and others which may arise out of the peculiar nature of the utility which is being operated.

Among the last named a most important factor in the present case is the probable amount of tolls to be collected over the series of years for which the order provides. These are admittedly speculative to a very large degree. The bridge company argues that instead of any increase, an actual diminution must be anticipated, because of the State's acquisition of the Conowingo bridge, and making it a free bridge, with the roads leading to it on both sides of the river part of a system of good roads, already completed or nearing completion. The theory of the public service commission, on the other hand, is for an increase year by year in the revenue of the bridge, in a decreasing amount, and is referred to by the counsel for the commission as "extremely conservative." No figures were presented before the commission by which the correctness of these estimates, one way or the other, could be tested.

At the time when the case was heard the road on the Cecil County side of the Susquehanna, leading to the Conowingo bridge, had not been converted into what is generally described as a good road, nor with this handicap had that bridge been thrown open to the public free of toll for any sufficient length of time to afford even a basis for calculation.

Taxation

In undertaking the work of the valuation of this bridge the commission proceeded about as follows: It had its own regular engineer estimate the cost of the reproduction of the bridge, and in the course of the testimony before the court another engineer, Mr. Shirley, was called upon the same point. The commission had determined naturally and properly to reject the valuation of the bridge simply upon the basis of what it had cost the incorporators. This would have been as far afield as it would have been to have taken the cost of the bridge to the P., W. & B. R. R. at the time of the original construction. The real point to be ascertained was not what it had cost either the railroad company to build the bridge or the incorporators of the bridge company to acquire it, but what was its fair value at the time of the investigation by the commission. In a number of cases recourse has been had to this line of inquiry for a similar purpose, but the value testified to of such a structure is only one of the factors to which consideration must needs be given in such a proceeding, and the reproduction value is liable to be increased from other considerations, and diminished by various allowances.

Experts were likewise called on behalf of the bridge company, and the variation between the experts was very great, ranging from a little over $300,000 by Mr. Phelps, the engineer of the commission, to more than $600,000 by Mr. Stuart; and while these were spoken of as reproduction costs, they were not such strictly, for the reason that both of the gentlemen estimated upon the basis of replacing the existing structure with one where the metal to be used was steel and not wrought iron. The big difference between the engineers who were figuring on reproduction costs is to be found in the estimated cost of certain materials and labor, Mr. Phelps taking an average cost before the great increase in prices of materials had taken place, and Mr. Stuart using the figures as they are at the present time. Neither of these represented normal conditions, and, therefore, neither was entirely fair or just.

Without stopping to discuss what in our opinion would have been a fair, just and reasonable figure to have adopted as the reproduction cost, what we do find is this: The estimate of Mr. Phelps of the reproduction cost was a little over $300,000; to this the commission made certain additions of factors not taken into account, or for which no allowance had been made by Mr. Phelps in his estimate, bringing up the value of the commission's investigation to $350,000.

The next step was marshalling the items to be de-

ducted from this estimated fair value of the bridge. In these were included depreciation, fixed charges and items of that general description.

The first of these to be considered was the question of taxation. That item the commission placed at $500 per annum through each of the five years during which their order was to operate. This allowance was made upon the basis of an exemption from county and municipal taxation contained in the charter of the bridge company. Without discussion whether such exemption was valid or invalid, the fact remains that the property was not exempt from State taxation, to cover which even the amount allowed by the commission of $500 per annum for the years 1916, 1917, 1918, 1919 and 1920 was, in view of the increases which have been taking place in the State taxation, manifestly an inadequate allowance. If now to this be added the amount of the taxes for which the bridge company will be liable upon its property or income to the Federal Government, the inadequacy becomes all the more apparent, and since the amount payable in the way of taxes is a deduction from the gross income, in order to determine the net income distributable among the stockholders, the effect is inevitably to reduce by some fraction the amount of such net revenue.

Depreciation Reserve

In an earlier part of this opinion attention was called to the attempt on the part of the commission to require the establishment of a main depreciation reserve account, and the deposit of a specified amount annually to the credit of such account. While the act which created and defined the powers of the commission authorized it to direct the mode of keeping accounts, so that the commission and the public might at all times be able to ascertain what the real condition of the company was financially, the order of the commission expressly provided that it was to be reserved by the company "for the purpose of making extraordinary repairs, structural changes or replacement of its bridge property when and as required." There was nothing in this which would enable any judgments recovered against the company to be paid from this reserve account, and the order of the commission said that "nothing herein contained shall be taken as in any way prohibiting the respondent company from setting up on its books any other or additional reserve accounts, the maintenance of which may be reasonably necessary for the proper conduct of its corporate affairs."

In determining the value of the bridge, there was allowed to be retained for legal expenses only the sum of $1,000 per annum, in the face of the fact that there were pending at the time suits against the bridge company in which the aggregate amounts claimed were $30,000. From this it follows that for estimating the net revenue of the company, although there were possible liabilities then the subject of litigation amounting to $30,000, the company was required to retain as a reserve only $1,000 per annum from its gross revenues in reaching an ascertainment of the net revenues of the company, yet the return to the stockholders was necessarily dependent upon the amount of the net revenues of the corporation.

The effect of these various items under the opinion of the commission was, therefore, to increase as far as possible the net revenue of the corporation, and then establish rates of tolls based on a net revenue so estimated to be obtained.

No item of depreciation, as such, appears in the tabulation, though it is probably intended to be covered under the so-called "main depreciation reserve." This was based not upon any direct ascertainment of actual deterioration in the bridge structure, but upon the basis of the estimated future life of the bridge. It is difficult to characterize this by any other term than guesswork. The engineers gave the estimate of the probable duration of such a bridge from the time of its construction. This was followed up by an estimated duration of the bridge in the condition in which it was at the time when the valuation was made, and which, if correct, would show a far longer period of durability than would have been anticipated at the time when first constructed. This is a factor which under the circumstances of this case is in the highest degree speculative and impossible to measure in terms of dollars and cents, as the commission undertook to do.

Then superadded to all of the considerations thus far noted was the following: "We have given consideration to the circumstances therein set up and have construed them as creating substantial equities in the public with respect to the rates of toll proper to be charged over the bridge in question." Just what these supposed *substantial equities* were, the opinion of the commission throws no light upon, but having them in mind, and after the deductions already mentioned, an allowance, and apparently a *substantial allowance*, was made for these equities, with the result that the value of the bridge was increased $100,000, and its value fixed at $250,000, and the tolls attempted to be adjusted so as to yield to the stockholders of the bridge company a proper return upon such valuation.

By a similar process of reasoning it would have been entirely possible to have reached any valuation which might have been desired. This is not intended as in any way reflecting upon the bona fides of the intent of those constituting the public service commission, either in fixing the fair value of the bridge or the rates promulgated by the commission's order; but it is important as showing that the method adopted and result obtained was unreasonable.

It is not the function of this court either to fix the valuation of the property or the reasonableness of the rates. Its sole power and duty is to examine those rates in the light of the method by which they were obtained, and say whether in our judgment the same were reasonable or unreasonable, and, after careful consideration, we are bound to hold the action of the commission unreasonable, and the decree appealed from must, therefore, be reversed.

Decree reversed and cause remanded to the Circuit Court No. 2 of Baltimore City to the end that the order of said commission may be vacated and set aside, and the case remanded to the public service commission.

The costs of this case to be equally divided between the parties to this cause.

The American Gas Engineering Journal is indebted to Charles M. Cohn, first vice-president of the Consolidated Gas, Electric Light & Power Company, of Baltimore, for information in regard to the foregoing opinion.

Converting a Small Gas Holder Into a Gas Oil Tank

Conversion Does Not Prevent Use of Holder Again for Gas Should Such Be Desirable—Cost Relatively Low

By A. C. HOWARD

Gas Engineer, United Gas & Electric Engineering Corporation, New York City.

In many gas works there is a small holder built years ago and since replaced with larger holders more adequate for handling the company's increased business. Such holders are frequently in good or fair shape, but idle simply because they are too small. These holders can be converted into a gas oil storage of large capacity at very small cost.

As an actual example, a company sending out 1,250,000 ft. of gas daily was amply supplied with holder capacity, but short on gas oil capacity. In the works there was an idle two-lift holder of 200,000 cu. ft. capacity. This holder was converted into on oil storage similar to that shown in the attached sketch. The sketch happens to show a single lift holder, however.

Only the inner lift of a holder can be filled with oil. The inner lift of the converted holder referred to above had a capacity of about 100,000 cu. ft. or 750,000 gal. It can with a safe margin store 700,000 gal. of oil, an enormous storage for a plant of this size.

The cost of converting it was about $700. This would have been much less but for the fact that the holder happened to be some distance from the generator and the point at which the oil cars are unloaded. The chief expense was that of laying pipe from the holder to the two above-mentioned points. This storage has now been in satisfactory use for a long time.

If considered advisable, oil from this storage can be pumped first into an ordinary oil tank instead of directly to the carburetor.

Operation

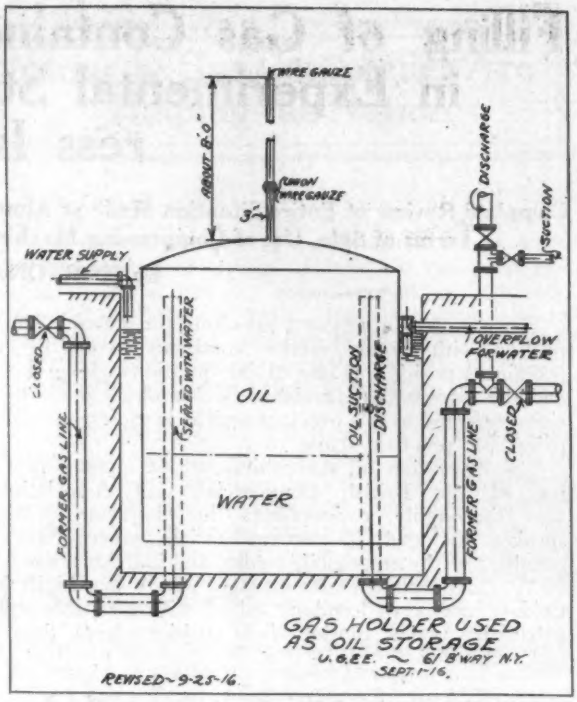
Oil is admitted into this storage in the same manner as gas. As the oil weighs nearly as much as the water in the pit, the holder will rise only 2 or 3 ft. when the inner lift is filled with oil. It is evident that when filling the oil will displace a large volume of water, which escapes from the overflow.

When taking oil out of the holder it will be necessary from time to time to add to the water in the pit to compensate for the volume of oil removed. The water level should be maintained up to, or nearly up to, the overflow.

This oil tank would appear to be safer than an ordinary tank, because there is no place over the surface of the oil in which an explosive mixture of air and oil vapors can accumulate.

In case a leak should develop, the overflow is so constructed that it will prevent the escape of oil with the overflowing water. If any oil leaks out of the gas container it rises to the surface of the water in the pit and can be recovered.

Note that the former pipe which is not used for admitting and reclaiming oil is sealed off with water. It is also necessary that the former gas valve on the gas line used for transmitting oil be absolutely tight. This



pipe could be disconnected and blanked off if it is deemed necessary.

The attached sketch was made for the purpose of indicating the alterations and connections needed only. No mound is shown in the pit, and a high mound would slightly reduce the estimated capacity. Likewise, no drip pots are shown on the former gas lines.

As no changes effecting the structure of the holder are made, it can readily be reconverted into a gas storage if needed for this purpose.

Use of Gas Fuel Is Increasing Among the Chinese

The chief stove business in Hong Kong at present seems to be in the line of gas stoves, which are handled almost entirely by the local gas company. The business even in that line is peculiar, for Chinese cooks usually dominate the kitchen arrangements of most Hong Kong households, and they do not favor gas for the reason that it is their custom to cook food for the Chinese domestic help on master's stove and with master's coal, and gas stoves do not lend themselves to that arrangement so readily. The limited supply of gas stoves coming to Hong Kong at present is almost entirely of British make, due, perhaps, to the excessive freight rates on American ranges. The greater portion of the business is in stoves leased consumers at a charge of 60 cents local currency or 43 cents gold per month at present exchange. The company also leases "geysers" or hot-water heaters at the same rate. The service of gas stoves is being gradually increased, but in the face of great difficulty and to some extent actual hostility on the part of Chinese servants. The use of gas for fuel among the Chinese themselves is on the increase.

Filling of Gas Containers on Automobiles Still in Experimental Stage but Much Progress Is Noted

Complete Review of Entire Situation Made at Annual Meeting of British Commercial Gas Association—Terms of Sale, Use of Compressing Machinery and Steel Cylinder Containers Taken Up

By NORTON H. HUMPHRYS

The use of town gas as a substitute for petrol in connection with motor traction continues to occupy a prominent position as one of the questions of the day, and the information furnished by lectures and discussions, referred to in a previous article, is rapidly crystallizing into practical shape.

The discussion on the subject at the annual meeting of the British Commercial Gas Association was thoroughly cosmopolitan in character. The speakers included Government officials, gas engineers, members of the automobile trades, and individual users. F. W. Goodenough (sales manager of the Gas Light & Coke Company, of London) led off with a capable and exhaustive review of the whole position—legal, financial and practical.

250 Cu. Ft. of Gas Equal to Gallon of Petrol Is General Average

E. S. Shrapnel-Smith, economy officer to the Government petroleum executive, on behalf of his committee expressed appreciation of the assistance afforded by the association, and added that it would be invited to send two representatives to the committee dealing with gas traction. He regarded the estimate of 250 cu. ft. of gas as equal to 1 gal. of petrol (quoting from a table exhibited in the room), as a very safe one. The Grimsby street tramways, using a partly stripped gas, had got down to an average of 210 cu. ft. per gallon of petrol over a long working period, but this was not the best result in his possession. Referring to the fact that some gas undertakings had pleaded shortage of coal and labor, or the difficulty of carrying out to completion some much-needed extensions, as reasons why they were not in a position to enthusiastically support this project, he had conferred with the Coal Control, High Explosive and Priority Departments, and might say that assistance in these matters would not be wanting.

A lengthy general discussion turned chiefly on terms of sale, the prospects of using compressing machinery and steel cylinder containers.

Stations Must Be Convenient—Prepayment Meter Suggested

Franklin Thorp furnished a written communication, urging that anything in the way of a general scheme must include filling stations spaced at convenient distances apart on all main roads; a supply available at all hours by arrangements of the automatic type, without the services of an attendant, and complete filling of the bag in the course of a few minutes. The gas supply pipes should be of ample size, the meter should be capable of passing 100 cu. ft. per hour at the ordinary supply pressures, and of the prepayment type, actuated by coins or tokens. The purchaser would simply connect the gas supply tubing to his container and obtain as much as he required by inserting the appropriate coins in the slot. He said that a rotary meter complying with these conditions could be supplied at a moderate cost, and the size would not exceed 18 in. cube. It had been suggested that a supply of 25 cu. ft. per minute would be sufficient, in which case the meter would be 12 in. cube in size, and would cost about $60. It would be accurate and reliable within maximum and minimum limits, would not pass gas at speeds below the minimum, was made of cast iron, and would not be affected by ordinary weather conditions. A meter of such dimensions would not be in the way if they required to erect compressing plant at a future time, and could be used if compressors should be attached to motors, or the engines so arranged that they could be applied when required to do the work of compression. He also described a special form of token, and advocated its use in preference to sterling coin.

In view of the present difficulty in obtaining new appliances of any description, it has been suggested that meters might be dispensed with, the containers being officially rated and the content legibly marked thereon, which would furnish the basis for a charge per bag. This would do very well if the purchaser would in all cases require a full bag, or could reasonably be expected to pay the same fee for, say, half a bag as for a full one. Motors on journey cannot so arrange matters as to arrive at the filling station with a bag practically empty. The traveler may find that he has, say, 100 cu. ft. left, which will not be sufficient to carry him to the next stopping place on the road. Or he may be nearing the end of his journey, and therefore not in need of a full bag. Other reasons might be quoted in proof of the fact that the supply is more likely to be asked for by the 100 cu. ft. than by the "bag." It also seems desirable that so long as the gas container is a novelty, an experienced attendant should be at hand during the filling. Later, when motorists are familiar with the whole process, and both purchasers and appliances have successfully passed the test of experience, an automatic system may be practicable. Another question that will be decided by experience, and that if neglected may cause difficulties that will be prejudicial to the use of gas, is whether the range of quality throughout the country is so great as to lead to trouble with the engines. Motorists have had a fairly good drilling in that direction with petrol of late.

A traveler journeying through the country will take his supplies from gas works of all sorts and sizes, from the metropolis to the village of perhaps 1,000 inhabitants. Stopping one day at a large town, he will probably be

furnished with a gas of 500 to 525 B.t.u. The next stop may be at a small works where steaming or blue gas is impracticable, and the retorts are worked by hand at a comparatively moderate temperature. Under such conditions, he will receive a 600 to 650 B.t.u. gas. With a 400-cu. ft. bag he may thus get anything between 200 and 260,000 B.t.u., which is the thing he wants rather than the 400 cu. ft. in bulk. His consumption will consist of so many B.t.u. per mile, and not necessarily of so many cubic feet of gas. The poor quality gas may have the effect of leaving him stranded in an out-of-the-way locality some distance from his destination, and the rich gas may carbonize in the cylinders. An official statement should be prominently on view at each filling place setting forth reliable information as to the calorific value of the gas supplied thereat, to enable him to estimate the carrying power, and the possibility of an adjustment of the engine supply. We have been lately insisting strongly on the importance of uniformity of composition in connection with the supply of gas, and the traveler will be in the position of a gas consumer who is supplied with variable qualities ranging from 500 to 650 B.t.u.

Domestic Consumers May Be Affected

There are other considerations that apply to the small country works. The mains do not exceed 6 in. in diameter, and, to say the least, do not carry an excessive supply pressure. The sudden opening or closing of a 2-in. cock at a time when cookers, gas engines, etc., are in full swing may be disastrous in the neighborhood of the filling station, and, indeed, over a great part of the district. Also it is obvious that the small gas works cannot make provision for filling out of ordinary working hours, or maintain a filling pressure throughout the night. It would be preferable that the filling station should be at the gas works, and supplied direct from the outlet of one of the holders.

Announcement Circular of One Manager

One of the neatest circular announcements bearing on this matter is that issued by William Higgs, engineer and manager of the gas works at Basingstoke, and it may be quoted as a model for similar purposes. The following are the leading features:

"The position of the filling station at the gas works at Basing Road is within 100 yd. of three main roads through the town.

"A list of gas works situated within a radius of 20 miles.

"Size of connections, 2-in. gas thread.

"Pressure of gas, 30 tenths water gauge.

"Charge for filling, 12 cents per 100 cu. ft. or part of 100 cu. ft.

"Hours of attendance, 7 a. m. to 5 p. m.; Saturdays, 7 a. m. to 1 p. m.

"Extras—Attendance after hours as above, or at any time on Sundays, 24 cents per filling.

"Special or extra fittings to container will be charged for."

How the Gas Companies Are Helping the Nation

The Public Service Company of Northern Illinois announced in a recent issue of *Public Service Lumen* that several men at the Evanston branch were leaving to enter the service. Harry T. Lynam was expected to leave Feb. 15, commissioned as first lieutenant in the Aviation Corps. John Wilkinson goes to Jefferson barracks as mechanic in the Aviation Corps. M. Finley and G. Joedicke are awaiting calls as second-class seaman and second-class storekeeper.

The Danbury (Conn.) & Bethel Gas & Electric Light Company officials are taking a prominent part in Danbury's war bureau. Charles H. Merritt, general manager, is a member of the fuel committee; Anthony Sunderland, cashier, and Mayor of the city, is on the executive committee, and W. P. Guinan, new business manager, is on the directorate and food conservation and war savings committees.

Elmer Rietz, formerly employed at the Kankakee, Ill., branch of the Public Service Company of Northern Illinois, has enlisted in the Aviation Corps, 210th Aerial Squadron, Chanute Fields.

The Des Moines Gas Company, serving Des Moines, Iowa, has the following employees absent from its offices and who are now in the military and naval service:

Clifford C. Allen.....Co. D, 2nd Iowa Infantry
Roy M. Beck.....Co. C, Iowa Engineers
Vern Coffland.....U. S. Navy
Wm. E. Dodge.....Canadian Oversea Service
Fred Mikesel.....Co. B, 1st Iowa Infantry
L. Burel Smith.....Co. B, 3rd Iowa Infantry
Phil Viggers..... Ammunition Train (Motor), Iowa N. G.

The Northern Indiana Gas & Electric Company, of Michigan City, Ind., has three of its employees in the services of the Government:

Slater Craft .....Co. G, 1st Ind. Infantry
R. M. Gideon..1st Lt. O.R. C., Camp Taylor, Louisville, Ky.
Shirley Rudolph.....Co. G, 1st Ind. Infantry

Lorenzo Maroni, of North Adams, Mass., who was employed in the office of the Greenfield Gas Light Company, has resigned for the purpose of joining the army. He has been accepted for service and is now in Readsboro, Vt., awaiting the call to report.

C. E. Renfroe, Jr., formerly employed by the Atlanta Gas Light Company, Atlanta, Ga., as a pipe fitter, entered the Red Cross Ambulance Corps June 1, 1917, and is now stationed at Camp Gordon.

H. E. Ives, of the United Gas Improvement Company, of Philadelphia, Pa., has entered the Science and Research Division of the Signal Corps, and may be reached at 1023 Sixteenth Street, Washington, D. C.

The Allentown-Bethlehem Gas Company, of Allentown, Pa., recently presented the employees' association of the company with a service flag containing eight stars.

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The Shipyard Housings—A Unique Opportunity

It is a curious coincidence how frequently good business judgment in the gas industry is linked up with the possibility of rendering a national service.

In its most elementary sense this statement can be illustrated by the direct connection between gas output and toluol output. No gas company with a given plant and distribution capacity could have any doubts as to the advantage of building its load up to as near to that capacity as it would be conservative to carry. Such a course would reduce the percentage of unaccounted for gas and lessen the cost of overhead per thousand cubic feet sold. Thus it is good business to put on as many additional thousands of cubic feet of gas as the plant can carry. And every thousand cubic feet additional of gas made means just so much greater capacity of toluol recovery.

Few are unaware that the Government is building several thousand houses for workers at various shipyards.

Gas companies at such localities should, even consulting merely their own self interest, go after the business such settlements can afford. This is good business. Then enters again the ever-recurring combination—national service.

It is imperative that the shipyards get every ounce of productiveness that he is capable of from each of the workers who will inhabit these houses.

An all-gas house will facilitate this aim materially.

The human being has just so much energy to spend. That part of it which is expended in home labor and in browsing around outside his own home is just so much less energy he will have to expend in the shipyards.

A comfortably heated and cheerfully lighted home will counteract the temptation to browse around outside. If every human being's home life was as pleasant as it should be the saloon would never have attained the prosperity it did attain. Even the moving-picture business, which has become a commendable business, warranting the encouragement of right-thinking people, would not have attracted the hordes it has.

Cheerful lighting and comfortable heating create a desire for home recreations, reading, etc., the most restful recreations that exist. They thus would tend to send the worker back to the shipyards each morning fresh and ready to put in his best effort.

Tending furnaces and coal cooking stoves is perhaps more irksome to the mind than it is tiring to the muscles. The elimination of this task would be another contributory factor towards conserving the worker's force to the task wherein his product is of the greatest value. Gas heating and gas cooking ranges would accomplish this, and be an added factor towards making his home a cheerful place to be in.

Gas Heating a National Health Builder

It is surprising, as we delve into matters of gas heating, how frequently we find our preconceived notions as to its being more expensive than coal heating shattered. Our mistake has been that we have confined ourselves too closely to figures to the exclusion of human nature.

Our calculated results would have been correct in the entirety were the American people careful coal users, which they are not.

Where coal is employed there is the inclination to throw the window wide open in preference to shutting off the heat. This tendency probably dates back to the time when coal was burned direct in the room to be heated, but it is common even among those who have never known anything else than steam radiators.

This tendency is absent when gas heat is employed. Just as the average lighting bill with electricity will not be materially higher than it will by gas, despite the fact that the former is more costly, so we are learning gas heating is proving just as economical in dollars and cents, even leaving out the saving in labor, as in coal heating. There is prevalent that instinctive respect in usage for what is considered an expensive fuel.

We have an illustration of this in an article published elsewhere in this issue. Here apartments are heated practically exclusively with gas. Yet the cost in the individual case is surprisingly low.

There is but one explanation: The heat is not used when it is not needed.

Further, there is a possibility, too, that, using gas, the consumer does not maintain as high a temperature in the house as he does with coal.

It would be interesting to have some comprehensive data bearing on this latter supposition. If it should be verified, then truly gas-heating salesmen could feel that they were performing a truly noble service to their kind.

American homes are notoriously overheated. Countless colds and pneumonia cases are traceable to this one factor alone.

Further, its effect is felt in diminishing the national endurance, in the softening of the physical resistance of the people of the country. It has made us to a large extent a nation of hot-house flowers.

Dozens of the young men who have given up their lives in the army camps died thus early, not because the nation called them out to war but because they were raised in overheated homes.

They were robust apparently, but only because they had never been subjected to protracted exposures to severe cold.

The nation has indeed much to be thankful for that we are a working people. The pneumonia deaths might otherwise have been terrible.

That this has not been so is because work built up the endurance to withstand rigors that no man can really call himself a complete man unless he is capable of withstanding, despite the sapping down effect of overheated houses.

By all means if gas heating conduces to lower heating temperatures in the average home, let us have general gas heating. We would say this were we a coal mine operator, a lawyer, a doctor, or what not, for we say it as a citizen, not as a gas man.

Assuming Your Proper Place in the Community

The gas company manager occupies a unique position. He may be inadequately paid and as poor as the proverbial church mouse, yet he is one of the important figures of the community. His opportunities and potentialities for furthering worthy causes are beyond estimate. It all depends upon the man.

If he possesses community pride and the spirit of useful citzenship, and is not unduly diffident in evaluating his own importance, he can be a highly important factor in any community activity.

He has within the walls of his headquarters building the means of spreading out his influence to probably as great a number of the people in his territory as any other resident. And, conversely, in proportion to the degree in which he takes his proper place of leadership in the community so will his company prosper or stagnate.

The people of the United States will shortly be called upon to subscribe to the biggest loan the Government has asked of them in history. As little as a year ago, perhaps, such an undertaking would have been stamped as impossible of accomplishment. But many things have happened in that year. More than one seeming impossibility has been successfully handled. Then, too, nothing is impossible when there is a *must* behind it. And this coming loan *must* be subscribed.

Magnificently though it may respond, the gas industry and its personnel cannot subscribe in themselves an aggregate sufficient to be more than a mere drop in the bucket. But, by whole-heartedly and actively spreading out its influence over the communities it is a vital factor in that it can directly magnify its contribution a hundred times over.

It should take steps to facilitate the distribution of Liberty Loan publicity. It should do more—it should merchandise Liberty Bonds. Put your selling forces on to the task. Let the canvasser sell bonds with as much interest as he sells appliances. Some companies have already done so, and if yours isn't among them put it there.

If every head of family and unattached bachelor in the United States subscribes for a hundred-dollar bond there will not be enough in the forthcoming huge issue to supply the demand. And the gas company commercial departments could go a long way towards bringing about that condition.

Publications

Measurement of Gas by Orifice Meter

Flexible leather-backed volume, 8 x 5 in.; 480 pages; illustrated. Author, Henry P. Westcott. Published by Metric Metal Works, Erie, Pa.

An endeavor to collect and preserve in book form the available data on the orifice meter and orifice measurement with a full set of pressure extensions necessary in figuring gauge charts.

The subjects discussed include the Oliphant pitot tube and portable pitot tip, box and tubes; measuring gas by means of it; orifices; capacity of orifices; the encased spring type differential gauge, installing orifice meters, checking differential gauge, coefficients; correcting coefficients; charts, pressure extensions, etc.

An interesting page in the book is that which points out the advantages of the orifice meter for measuring coke oven gas.

The discussions are carried through in a clear and readable manner. One who has read to some degree treatises on gas measurement cannot but appreciate the effort this writer has made to convey the information he supplies with a minimum of effort to the reader. He is aided in this by the mechanical perfection with which the work is brought out. The appearance of the book invites reading, and makes a study of its contents as easy as a subject of this nature can be made consistent with accuracy.

It is a splendid example of a book prepared with the nature of the kind of men who will have the most use for it constantly in mind.

Coal Gas Residuals

Cloth-bound; 244 pages, illustrated. Author, Frederick H. Wagner. Published by McGraw-Hill Book Company, Inc., 239 West Thirty-ninth Street, New York City. Price, $2.50 net.

An important and timely addition to gas literature, the work being a second edition of the author's previous volume under the same title, revised and enlarged with a view to helping the gas man meet existing conditions.

The recovery of benzol especially bids fair to become general among gas companies large and small. Major Wagner in this edition supplies the very help many gas engineers will be seeking to assist them in grappling with the various problems and complications this new situation will present. In hurrying out his second edition, both the author and the publisher have performed a real service both to the gas industry and to the nation.

The volume is available at a time when an actual need for it exists. The majority of the copies of the first edition, we will hazard a guess, will be found fairly spotless and crisp on the library shelves of a good many gas companies. When it appeared there was a technical need for it, but the need for this edition is actual. It will be used by men who will consult it in the progress of their work. They will not stop to wash their hands, and many of the copies most likely will find their resting place on the sometimes dusty desk of the works superintendent. This edition bids fair to be thumbmarked and begrimed to an extent the first edition was spared.

The author makes an important committal in regard to benzol as a motor fuel. He takes it as an established fact that it will soon be an active competitor of gasoline.

The volume is interesting and complete. The residuals covered are: Tar, naphthaline, cyanogen, ammonia, benzol, sulphuric acids, etc.

The Lighting Art—Its Practice and Possibilities

Cloth-bound; 224 pages, 43 illustrations, 9 tables. By M. Luckiesh, Physicist, Nela Research Laboratory National Lamp Works of the General Electric Company. Published by McGraw-Hill Book Company, 239 West Thirty-ninth Street, New York City. Price, $2.50 net.

Although much valuable material has been presented to the field on the subject of lighting, the author has struck a note in this work which has been more or less neglected in the effort to produce engineering and scientific data on lighting, and that is lighting from the broader artistic and asthetic aspects.

The work shows the need of closer co-operation between the illuminating engineer, the architect and the efficient lighting salesman in visualizing and obtaining lighting effects which combine harmoniously the artistic aspect with the utilitarianism aspect. After considering the expressive possibilities of light and the necessity of developing the proper visualization of lighting effect and of introducing variety into the lighting scheme, the author points out the importance of distribution of light and discusses lighting fixtures and modern light sources. Various other chapters deal with the scientific and artistic possibilities of color and light, the study of the spectrum, the physics of color mixture and the psycho-physiology of color. Portable lighting units, residence lighting, commercial lighting, lighting of public buildings, industrial lighting, stage-lighting and spectacular lighting are ably touched upon to bring out the greater artistic expressive and psychological possibilities of lighting which still lie dormant.

A chapter devoted to computation and data will be found most helpful in choosing the proper lighting equipment as it takes up the general effect which may be obtained by the various classes of lighting units. Natural lighting and the language of color are also touched upon briefly.

While this book to the reviewer's mind is one no lighting specialist or illuminating engineer should miss, the admirable chapter summaries and the clear style of the writer, barring some obviously necessary repetition, place it within the scope and reach of every open-minded gas-lighting salesman.

Human Interest Window Display

An effective and timely display was recently made by the New Orleans Light & Power Company, New Orleans, La. The floor was covered with a soft neutral-toned rug; two long windows in the rear had curtains of floral cretonne over net; tall palms in pots were placed in the corners, and two large crossed flags graced the wall between the windows. A large canvas sign hung from the ceiling advised:

ELIMINATE LABOR IN THE HOME

Use Gas for Cooking and Heating—Reduce Your Fuel Bills—Invest the Amount Thus Saved in W. S. S.

At one end was a gas stove at which a young woman in light blue cap and apron was cooking, and a card above the range read, "I will do your cooking." At a table was seated a young man reading, and against the base of the table lamp was a card, "I will give you light." At the other end was a cheerful gas grate, before which stood two little tots in long flannel night robes, with hands extended to the blaze, while a card suggested, 'I will keep you warm." A hot-water coil was shown with card, "I will give you hot water," and a small stove, near an ironing board, held irons, with card, "I enable you to iron in comfort." Down front, in the center, was a low table strewn with sheets of green stamps, and behind it in a little rocker sat a flaxen-haired girl in pink, while a card leaning against the table leg announced, "We sell War Saving Stamps." The whole window was a decidedly effective combination of practical domestic efficiency, and not only increased the sale of thrift stamps, but brought home in a direct and forcible manner the value of gas in a home.

The Gas Iron and an Effective Way to Sell It

Selecting the Type that Has in Itself a Selling Appeal—Selecting An Iron that Will Continue in Use—Methods Adopted by One Company with Continuing Results

By H. H. LACKEY

Unless discrimination is used the gas iron as an item for merchandising by the gas company is apt to have a boomerang effect. Any appliance which it sells is to the gas company merely a means to an end—that end being the sale of gas. No company has the time or inclination to sell an appliance merely for the turnover profit it represents. The gas company is seeking the continued increment of profit on the gas consumed its use represents.

Gas irons have been sold that speedily fell into disuse. Such sales represent more than mere wasted effort on the part of the gas company. They involve distrustful consumers and hindered merchandising in the future.

The gas company with which the writer is associated was firmly convinced that the internally fired domestic gas iron was a splendid medium for increasing gas consumption in the home, but the experiences of a few years back made its officials hesitate because every iron then in the market that they had sold invariably led to trouble, any number of complaints, and in some instances resulted in damage suits for burnt linen, so that they finally practically abandoned the field.

It was therefore a matter of some difficulty to persuade them to open up this subject again. It was done, however, but this time they determined to go thoroughly into the whole situation.

Selecting the Iron

The first question we asked ourselves was, What "style" of iron will make the strongest appeal to the laundress or housewife? And this is about the way the question was answered.

An article of this kind made to sell and to use must "look good" and give the service required, and so we pro-

Boston Output for February Is Good

The February output of the Boston Consolidated Gas Company was 557,556,000 cu. ft., or 8.1 per cent more than that for the corresponding month last year.

Lost Sales Are the Ones That Interest This Manager

"I don't want any of you men to come to me and tell me all about the big sales you have made," says one sales manager in talking things over with his men. "You are supposed to make sales; that's what you are hired for. Don't tell me about them; I'm not interested, and I'll see them anyhow in the monthly report.

"But come in any time you want to and tell me all about the sales you have lost, and let's talk things over. Maybe I can help you or suggest another way of going after the business that will land the sale after all. That's worth talking about, especially if we can find out how to land the business.

"But the sales you have made don't interest me. The sales you lost do."—*Electrical Merchandising.*

NU-STYL GAS IRON WHICH, BY A SLIP-OVER PIECE, MAY BE MADE 2 LB. HEAVIER

ceeded to itemize the "points" of an ideal gas iron as follows:

1. The iron must be attractive to the eye, and should have interesting talking points; the more the better.
2. Designed so that the nose will find its way over the most delicate fabric without "catching."
3. Must have the necessary weight (not under 6 lb.) without looking clumsy, and if this weight can be increased in the same iron without altering its "balance," so much the better.
4. The handle should be easy to grasp, cool, and so constructed as to give no "jar" to the operator's wrist.
5. The necessary adjunct, the hose, to be connected to the iron so that it will give plenty of arm room, and not get in the ironer's way, and the hose connection be always cold so that any standard hose can be used in safety, thus doing away with complicated metal joints.
6. The burner must be constructed so that the heat is applied evenly over the face of the iron, and in such a way that the "nose" which first meets the cold surface of the cloth will always keep hot.
7. The burner should be readily accessible so that all parts can be easily cleaned.
8. The combustion chamber made so that positively no flame can get on the outside of the iron through the vent holes.
9. The combination of burner and gas mixer, above all, must be such as to insure odorless, sootless, perfect combustion, and this through all degrees of temperature, whether the iron be burning the maximum or minimum quantity of gas or whether the iron be old or new.

I may be asked why we gave the merely physical points of the iron first consideration, and left the really important matters of burner construction and combustion to the last. Well, we were choosing an article to sell as well as to use, and as women are the principal purchasers of a gas iron, these make a direct appeal to them and would sell the iron. They would never think of "combustion" and such until they got the first bad headache, and then the iron would come back. Therefore, as the ultimate consumer "pays the freight," we gave her our first thought and left the technical points for the gas man.

Co-operative Effort

You will agree that these points carry a pretty stiff specification for any gas appliance, and where to get an iron to meet these "gas iron ten commandments" was a question. We finally called in the representatives of the iron manufacturers and choose three makes; each of these we submitted to a severe laboratory test, ultimately selecting the Nu-Styl Two-in-One Odorless Gas Iron sold by the Perfect Combustion Company, Peoples Gas Building, Chicago. Results show that the iron filled the bill, and then some; for example, ability to successfully compete with electric irons wherever economy, durability and heat regulation count.

Then the question rose how to market the irons: The largest number in the shortest time?

A representative of the manufacturers was called in consultation, and this was the plan of selling decided upon and successfully carried through.

Merchandising Plan

The manufacturers undertook to furnish the services of an expert demonstrator and saleslady, who took charge of the office selling.

One of our display windows was devoted entirely to an attractive exhibit of the iron, and immediately behind and in full view of the public a space was devoted to the use of the demonstrator, fitted with ironing board and other laundry accessories; the surroundings made as attractive as could be, and all emphasizing the gas iron. Simultaneously with the completion of the "gas iron nook," as we called it, advertisements were run in the daily papers, inviting the ladies of the city to call on Miss Demonstrator at the gas office and hear what she had to say about gas irons. Also all bills delivered during the time of the exhibit carried a "flyer" with the same advertisement.

No Addresses Taken

This publicity campaign lasted over a period of one month, during which time one of our regular floor salesmen was detailed to assist the demonstrator, thus relieving her of the detail of making out contracts, etc., and allowing her to give all her attention to interesting her visitors in the gas iron.

No special effort was made to obtain names and addresses, neither was any offer made to send a salesman to the home, the object being to make the customers feel that their purchases, if made, were entirely voluntary on their part.

Invitation to "Tell Your Friends"

This does not mean that we were neglecting any opportunity to make sales, but the idea was to convey the impression that this special exhibit was primarily educational, meant to show an added use of gas in the home. What we did do, however, in every instance where the slightest interest was displayed, was to ask the lady to "tell your friends to come and see us," and they did so, as any number of people came in saying Mrs. So and So told me about the new iron.

The expense of this preliminary month's advertising was divided between the manufacturer and the company, they paying the services of the demonstrator and furnishing all circular advertising used during that time, the other expenses being carried by us.

The Sales Drive

Then came the actual drive for sales. This was carried out in the time-honored and ever-effective manner, "jingling doorbells"; in other words, by house-to-house canvass.

Special solicitors were employed and were given instructions by the manufacturer's expert. Payments were made on the instalment plan, and solicitors made their deliveries and were authorized to collect the first payment. They were paid on a commission basis. The city was districted and the whole force put to work in one district after another under competent supervision.

In this way the territory was covered quickly and every house and apartment visited. The results were eminently satisfactory, and we succeeded in establishing a steady demand for these irons, which when sold gave very excellent service, and hence stayed sold.

By making a reasonable allowance

(without loss to us) for old irons turned in, we re-established ourselves in the good graces of those to whom we had formerly sold old-style, trouble-making irons, thus converting a dissatisfied customer into a booster for an all-gas kitchen.

Save by the Use of Gas

The San Antonio Public Service Company, San Antonio, Tex., have been giving much publicity to the subject of gas as a means of reducing fuel expenses, and recently had an effective and catchy display along this line. They disclosed a section of a modern business office, with a man seated at a desk holding a sheaf of bills in his hand. Down towards the glass was a 4-ft. panel card on which was a huge red interrogation point and the words in black:

"The Eternal Question—What is my fuel going to cost me?"

A second card said: "What will my wood and coal cost me? I don't feel that I can afford it." These are questions uppermost in the minds of every housekeeper and business man to-day, for never before was there such a necessity for keeping the costs down. Here is your solution: "Use gas for cooking and heating." They also made use of printers' ink in their campaign, one of their most effective ads being adorned with a cut of a long slender interrogation point, with the caption:

WHAT IS MY FUEL GOING TO COST?

Save expense by using gas.

Nor worry about deliveries.

You pay a definite amount that does not fluctuate with market conditions.

You pay for gas only as it is used —no need to tie up your capital or space in a fuel pile.

You abolish waste, dirt and haulage charges.

These facts are worthy of your serious consideration.

Telephone us and we will see that you have immediately the comfort and convenience of gas.

Northern Illinois Company Has Good Report Despite Conditions

Despite the increased cost of labor and materials necessary for the production and merchandising of gas, the Public Service Company of Northern Illinois came through the year 1917 with a surplus of more than half a million dollars and was able, after deducting for amortization and depreciation an amount equal to the previous year's appropriation, to carry a balance of $133,980 to surplus.

This is revealed in the annual report of the company which has just been made public. In view of the extraordinary conditions confronting all utilities, and especially gas companies, Samuel Insull, president of the Public Service Company, refers to these results as "very satisfactory."

The report reveals that the company shipped 100,000 gal. of crude toluol, representing the production of the company's gas works at Niles, although that by-products plant was completed only last March. Similar by-products plants are now in the course of construction at Oak Park and Blue Island, Ill. These will be completed by April 1. The company has contracts for the entire year with the United States Government for the sale of pure toluol. The company, which serves scores of towns in thirteen counties in northern Illinois, now has gas plants at the following cities in that State: Streator, Ottawa, Kankakee, Pontiac, Oak Park, Blue Island and Niles.

The report made by President Insull to the stockholders at the annual meeting on Feb. 25 follows, in part:

The board of directors submits this annual report for the fiscal year ending Dec. 31, 1917.

The earnings and expenses for the year were as follows:

Gross earnings		$8,797,764.64
Operating revenue from electricity, gas, heating and water	$7,610,322.29	
Merchandise sales and other income	1,187,442.35	
Expenses (including taxes)		5,309,333.42
Operating for electricity, gas, heating and water	$4,388,441.09	
Merchandise department	920,892.33	
Earnings		$3,488,431.22
Charges against earnings:		
Interest on bonds and notes		1,614,866.64
Available for dividends		$1,873,564.58
Dividends paid:		
Preferred stock		455,280.00
		$1,418,284.58
Common stock		832,733.62

Including $60,749.50 on stock held by trustees of employees' savings fund and not yet paid for, which amount has been returned to the company's treasury.

Surplus for the year	$585,550.96
Appropriated out of surplus earnings for the year for amortization and depreciation reserve	451,570.80
Balance carried to surplus	$133,980.16

Gross operating revenue for the year 1917 showed $1,014,607.71 increase over the preceding year, and the growth in number of customers has been continued, as is shown by the following table:

	Number of Customers		
Class of Service	1917	1916	1915
Electricity	85,421	75,900	64,540
Gas	65,261	61,134	56,743
Water	5,896	5,701	4,830
Heat	1,282	1,358	1,378

Novel Gas Installation at Denver

An interesting gas installation was made recently in Denver when an old dental furnace was used to distill oil from the shale rock found in the western part of Colorado. The process requires a temperature of from 1,200 to 1,500 deg. Fahr. It is estimated that there is about three times as much oil in the shale of western Colorado as has been discovered in the State's present oil fields, and it is believed that quite a business can be developed from this distillation process.

Catchy Signs Boost Handsome Ranges

All high-grade articles of merchandise should be advertised in a high grade manner, was the idea of the United Hardware Company, New Orleans, La., and they proceeded to so give publicity to several handsome gas ranges and heaters. The display cards were black, about 2 x 3 ft., most artistically lettered in bright colors, three colors to the card and each card colored differently. These signs were so different, both in design and lettering, from the ordinary showcard, that they attracted universal attention. One of them suggested, "Because you can't afford to buy coal, that doesn't mean to say that you can't get your three meals a day. Come in and look over our line of gas ranges." Another, close to a cosy looking heater, suggested, "Why freeze these cold days through not being able to get coal? Buy a gas heater and be on the safe side." They also took advantage of the popularity of William Hart, the movie actor, whose films were being shown at several of the local play houses. They showed a lithograph of Mr. Hart in cowboy attire and below it, "Just as sure as William Hart is a moving-picture star, our line of gas ranges and heaters can't be beat." Down in front, at one side, was a gas range, on which was a small cardboard stage set for a minstrel show. Two dusky figures—dolls about 8 in. high—in gay suits of purple and gold satin, seated in little chairs, held tiny banjos, and a card suspended from the stove read:

"What did you say? No, sah, we is not de gold dust twins. We is put here to introduce gas heating and cook stoves—de kind ebery one knows is de best to keep you cool in summer and warm in winter."

A most striking section showed long curtains of red, dropping in loose folds, gathered in the center, through which was thrust the head of a laughing girl. The card was captioned: "Just giving you a peep at a couple of our gas stoves and ranges, to keep you from forgetting about them. Come inside and inspect our complete line."

Not many of the stoves were shown in the window—just a couple, so that their good points could be carefully studied, while the catchy card of invitation brought in scores of people to view the large line displayed within.

Sandusky Company Finds Thawing of Water Pipes Profitable

A contract has just been entered into with the city of Sandusky, Ohio, whereby the Sandusky Gas & Electric Company is paid $15 per service for thawing out frozen water pipes up to and including 1½ in. in size. For each ½ in. increase in size of pipe aboue 1½ in. $1 additional is charged.

This price covers the work along the established lines of the company. Where an extension of more than 200 ft. is required, $1 extra is charged for each additional 100 ft. of service extension.

In addition, the city furnishes the necessary conveyance to convey the equipment from place to place, and also furnishes an experienced waterworks man to look after the water piping. The city makes all arrangements with the customer and makes collection, and the company bills the city each month for the service rendered. The average time required to thaw out an ordinary service after the current is applied is about eleven minutes.

This does not only mean a substantial profit to the company, but a considerable saving to the city; for were it not for this system being employed in many instances it would become necessary to take up the pavement in the streets in order to thaw out the frozen pipes by other methods.

A Lucky Thirteen Sale

A good idea for attracting public attention was recently adopted by Bry's, Memphis, Tenn., who bade defiance to the "13" superstition and announced a "Lucky Thirteen" sale. This was duly heralded in the newspapers and in their show windows, various gas appliances being marked at figures ending in 13—$1.13, $2.13, $4.13, etc. Under a ladder in their show window was the figure of a young woman pointing with pride to a gas hot water coil, and holding a circular card on which was printed:

Get in the Band Wagon.
Purchase Your Gas Appliances
NOW at Our
Lucky Thirteen Sale.

This sale very appropriately commenced on the 13th of the month, and continued for thirteen days. The quarter-page announcement of the sale which appeared in the papers had a figure "13" in each corner, and the ad read:

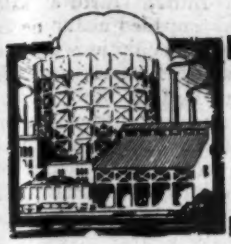
The Thirteen Hoodoo
will be effectually killed for any one
who takes advantage of the
bargains of our
Lucky Thirteen Sale.

Industrial Fuel Appliance Sales

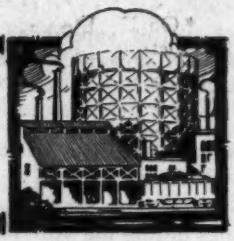
Recent figures on the sales of industrial fuel appliances by the Denver Gas & Electric Light Company will be of general interst. In 1914 the sales were $9,884; 1915, $14,335; 1916, $20,327, and 1917, $28,105. In three years' time there was an increase of 200 per cent. During December, 1917, these sales were $6,075.35,, compared with $1,569.05 for the same month of 1916; $875.30 in December, 1915, and $600.90 during December, 1914.

Much pioneer work has been done by the introduction in Denver of such appliances as gas-heated, motor-driven restaurant dishwashing machines; motor-driven, gas-fired reel bake ovens; high temperature steel heat-treatment furnaces; Kellum chocolate and hot milk dispensing machines; automatic gas-fired, high-pressure steam boilers; scientific safety gas garage heaters, gas-fired and steam-jacketed kettles and vegetable paring machines.

THE WESTERN STATES GAS & ELECTRIC COMPANY expended $816,097 on betterments in the past eleven months.



NEWS OF THE GAS INDUSTRY



Low B.t.u. Standard Extended for New Jersey at the Request of Ordnance Department

In response to an urgent request from the production division, the Ordnance Department of the United States Government, the State board of public utility commissioners has extended for thirty days its order of Jan. 26, allowing the Public Service Gas Company of New Jersey to lower its gas standard in order that the Government may continue to recover toluol.

The utility commissioners received from the Ordnance Department a telegram stating that at the end of the original period of suspension the Government found that the gas oil stocks of toluol recovery plants were still far below normal, and that in spite of utmost efforts of the Ordnance Department to increase these stocks it was necessary to ask for continuance of the reduced B.t.u. standard.

Consolidate Two Gas Cases At Chicago and Set Hearing for April 2

An order consolidating the two cases which have been pending in the Circuit Court for a number of years, and by which counsel for the city hope to collect $10,000,000 from the Peoples Gas, Light & Coke Company for the consumers, was entered recently by Judge Windes. One of the cases, a bill filed by the gas company questioning the validity of the State law passed in 1905 giving the city council the right to fix gas rates, has been pending before Judge Pinckney since 1911.

The other matter, the city's suit to collect the money which its law department contends is due gas consumers by virtue of the city ordinance passed in 1911 fixing a 70-cent rate for gas has been before Judge Windes. The consolidated litigation will be tried by Judge Pinckney April 2.

Court Holds Present 77 Cent Rate at Minneapolis Binding Until Nov. 1, 1918.

District Judge J. W. Molyneaux recently denied the request of the Minneapolis (Minn.) Gas Light Company to reopen the gas rate case of 1914 for the purpose of obtaining an upward revision of gas rates. This means that the present rate, 77 cents per 1,000 cu. ft., must remain in effect until Nov. 1, 1918.

Judge Molyneaux, in his memorandum accompanying his decision, makes the point that the rate for the five-year period ending Nov. 1 was fixed by stipulation of the city and company, and that the court at that time merely recorded the mutual agreement of the company and city that the rate should be fixed.

The contention of the gas company, presented by affidavits and by arguments of J. O. P. Wheelwright and David F. Simpson, was that the gas company had lost $350,000 in 1917 because of increased cost of materials, and that greater losses would be suffered unless the present rate was changed. The company relied for its right for a reopening of the old rate case upon a clause in the contractural ordinance with the city that the rate should "never be so fixed as to fail to afford a reasonable return upon the capital investment," and "should always be subject to review and correction."

Increased Rates Asked for Boulder, Col.

The Federal Gas Company, Boulder, Col., desires to increase its gas rate of $1 per 1,000 cu. ft. to $1.30 for the first 10,000 ft. An advance of 30 cents for 1,000 ft. is asked covering the second 10,000 ft., 20 cents for the third 10,000 ft., and 20 cents for the fourth 10,000 ft.

Plans for Amalgamation of the American Gas Institute and the National Commercial Gas Association Rapidly Approaching Completion

The members of the two associations affected, as well as the entire gas industry, will be interested in knowing something of the developments to date, concerning the proposed amalgamation of the American Gas Institute and the National Commercial Gas Association.

At a dinner given by President Jansen Haines, of the N. C. G. A., at the Hotel Traymore, Atlantic City, on the evening of Nov. 15, 1916, to the public policy committee and boards of directors of both associations, the question of having a single gas association in place of the two existing organizations was informally discussed, and the consensus of opinion at that time was that this would be desirable.

Subsequently the boards of directors of both associations referred the matter to their respective public policy committees, which appointed a "joint committee" of eight men, four from each association, with power to draft a plan for one new gas organization.

The joint committee on amalgamation consisted of the following:

Representing the A. G. I.—

S. K. Chase, Chicago, Ill.
C. H. Graf, Albany, N. Y.
J. B. Klumpp, Philadelphia, Pa., secretary.
W. Cullen Morris, New York, N. Y.

Representing the N. C. G. A.—

F. W. Frueauff, New York, N. Y.
*W. Griffin Gribbel, Philadelphia, Pa.
E. N. Wrightington, Boston, Mass.
P. S. Young, Newark, N. J. chairman.

* On Dec. 13, 1917, H. D. Schall, of Detroit, superseded Mr. Gribbel, who is now in the service of the United States Government.

T. C. Jones, of Columbus, Ohio, was also invited to represent the natural gas interests.

The joint committee held meetings during the year 1917, and finally prepared a plan of organization, constitution and by-laws, schedule of activities, plan of financing, etc., which were referred to the public relations committee of the A. G. I. and the public policy committee of the N. C. G. A. Both of these committees approved these plans, and referred them to the board of directors of the two associations for their approval.

The two boards of directors met separately and then jointly on Dec. 13, 1917, going over the plans in detail. As a result of this joint meeting, certain changes were suggested which the joint committee was instructed to include in the plan. The committee was also requested to prepare a definite plan of procedure for bringing the amalgamation to a focus.

As the matter now stands, the boards of directors of both associations will meet again in March to consider finally the revised draft of the constitution and by-laws and plan of procedure, which latter is in course of preparation.

A complete prospectus covering in detail the plan of organization will be sent to all members of both associations in the near future, so that they may be familiar with the scope and purposes of the new society before the amalgamation is finally voted upon.

St. Louis County Company Accepts Tentative Rate Increase

The St. Louis County Gas Company recently agreed to the proposal to file an increase in rates of 10 per cent, with the agreement that, if an appraisal by the Missouri Public Service Commission shows that the rate is unreasonable, the company shall refund all excess paid by gas users while the increase is in effect. The rate was filed and takes effect at once.

Atlanta Gas Situation Investigated by Expert

R. S. McBride, chemist employed by the Bureau of Standards at Washington, D. C., recently investigated the gas situation in Atlanta. He has returned to Washington to make his report. The report will probably be forwarded from the Washington department to the Georgia State Railroad Commission, but it is not likely that this latter body will receive it for a week or more.

Mr. McBride has carefully gone into every phase of the quantity, quality and details of service of the gas company, and has made his own investigations in every item, declining to accept the figures and reports either of any other organization, individual or of the gas company.

He states that he believes the shortage in the gas oil supply is passing, and adds that similar situations to that in Atlanta have been found in other cities.

Application Filed for the Purpose of Combining Nine New York Natural Gas Companies

The Frost Gas Company, with an office at Buffalo, has filed an application with the public service commission, Second District, for consent to the transfer of the franchises and properties of the South Shore Natural Gas & Fuel Company, the Silver Creek Gas & Improvement Company, Fredonia Natural Gas Company, the Attica Natural Gas Company, the Ontario Gas Company, North Buffalo Natural Gas Fuel Company and the Niagara Light, Heat & Power Company.

The petition recites that the Frost company on Jan. 25, 1917, acquired the stock of the South Shore Natural Gas & Fuel Company, the Silver Creek Gas & Improvement Company and the Fredonia Natural Gas Light Company. These companies supply 11,317 consumers with a pipe line and distribution system of approximately 438 miles in length. They practically exclusively supply with natural gas for fuel, lighting and power Dunkirk, Fredonia, Westfield, Silver Creek and Mayville. The gas is obtained as far east as approximately 20 miles west of Buffalo and in the vicinity of Farnham.

The North Buffalo Natural Gas Fuel Company supplies natural gas for domestic consumption in the northerly part of Buffalo, and the Niagara Light, Heat & Power Company supplies manufactured gas in Tonawanda and North Tonawanda. The Niagara company is about to supply by-product gas in Tonawanda and North Tonawanda, and will be required to make a large investment in pipe lines, apparatus and holders. It also supplies gas to Kenmore, 10 miles east of which is the westerly end of the Alden-Batavia Natural Gas Company's pipe line and distribution system.

The Alden-Batavia Natural Gas Company, the Akron Natural Gas Company, are operated as one system, supplying 7,423 customers in Erie, Genesee, Wyoming, Monroe, Livingston and Ontario Counties. The natural gas is obtained locally.

It is alleged that if the applicant was permitted to own the above-named corporations a great saving in the expense of operation and management could be effected. It is also claimed that the natural gas supply is becoming depleted, and in the opinion of the petitioner some substitute for natural gas must be found in the near future.

The cost of manufactured gas has so increased, it is alleged, that it does not seem to be valuable commercially, and the present outlook is for the use of by-product coke-oven gas. This necessitates a large investment. With the companies under one management, it is claimed that money can be obtained in normal times for reasonable development along the lines indicated and at reasonable rates and upon satisfactory terms.

Consolidation of Public Utilities In New Hampshire

The tendency in New Hampshire is toward the consolidation of public utilities, or at least a combination of interests through connection for the interchange of service. This is true especially of electric and telephone utilities, the last year or two having seen a number of consolidations and connections and many are in prospect.

The 1916 figures available show that the gas utilities had a plant investment of $3,534,614.65, operating revenues of $710,635.66 and operating expenses of $534,423.46.

Increased Rate For Augusta, Ga.

The State railroad commission, in executive session Feb. 8, granted the petition of the Gas Light Company of Augusta, Ga., asking for an increase of 15 cents per 1,000 cu. ft. in its rate of charge.

This gives Augusta a rate of $1.30 per 1,000 ft., the old price being $1.15.

In this petition the Augusta company set forth that an increase in rate was necessary to produce revenue to meet the increased cost of materials for the manufacture of gas and other increased expenses due to conditions incident to the war.

The Augusta company stated that it has been maintaining and can maintain an average quality of 600 B.t.u.

The commission recently granted an increase to the Savannah Gas Light Company and to the Rome company on the same grounds, stipulating that these companies shall maintain a certain standard quality of gas.

The American company's petition for an increase on similar grounds is pending.

Westfield, Mass., Increase Effective March 1

The local municipal light commission has increased gas rates from $1.25 to $1.45 per thousand to go into effect March 1. There are several reasons for this increase, among the foremost of which are the increases in the cost of coal, and the fact that the lack of coal has by necessity made an increase in the sale of gas, which in turn has forced the commission to enlarge its manufacturing plant, install new equipment and pay other added expenditures.

The commission stated, however, that the new rate was not a fixed one and that under ordinary conditions the rates will again be reduced to normal.

Permission to Increase Rates Asked at Newburgh

The Central Hudson Gas & Electric Company, of Newburgh, N. Y., has asked permission of the public service commission to increase the price of gas in that city, and if permission is granted gas will cost a flat advance of 25 cents a thousand feet to all consumers.

Louisville Company Sells Coal to Public

An acute shortage of coal at Louisville was relieved by the action of the Louisville Gas & Electric Company in placing a storage reserve of 3,000 tons at the disposal of the city. Fuel from this supply was distributed to the public by the board of public works under a plan suggested by M. W. Walsh, superintendent of the gas department of the company. The *Courier-Journal* of Jan. 31 said: "The fact that the city is now busily engaged in selling the 3,000-tons supply of fuel offered by the Louisville Gas & Electric Company at cost price is believed to have been the step that stopped the shortage."

The company produces its own coal at a mine 112 miles from Louisville, and owns twenty-five steel cars continuously engaged in bringing fuel to Louisville. As the result of this arrangement, made last year, the company's modern steam turbine station has been operated without danger of fuel shortage.

Minneapolis Report Shows Increased Earnings

Report of the Minneapolis (Minn.) Gas Light Company on business of the company in 1917, required under the contractual ordinance existing between the company and the city of Minneapolis, was filed recently with the city clerk.

Total gross income of the company, according to figures by Marwick, Mitchell, Peat & Company, accountants, is given as $2,197,973.47. Total expenses of operation, including cost of manufacturing, distribution, commercial and general expenses, depreciation and taxes, is given as $2,064,428.65, leaving net earnings from operations of $133,544.82. This is apportioned as follows: Interest on bonds, $319,541.67; sinking fund accruing in 1917, $147,000; undivided profits (loss), $332,996.85.

Assets, including a valuation of the plant and property as of Jan. 1, 1917, and improvements and betterments since that date, and fixed assets such as supplies, accounts receivable and cash, are given at $9,998,380.16.

Liabilities give the funded debt bonds at $6,367,000, with capital stock given as $800,000. Total current liabilities are given at $449,597.56; depreciation reserve, $1,166,482.86; sinking fund reserve, $1,162,250, and undivided profits, $53,049.74.

Improvements and betterments, including mains, extensions, meters and services, with deductions for street lamps removed, are figured at $300,062.42.

Temporary Increase Granted At Janesville, Wis.

In a decision just rendered by the railroad commission at Madison the New Gas Light Company, of Janesville, Wis., is given authority to increase its rates by 10 cents per thousand cubic feet per month. This is practically half of the increase asked for by the company, but is considered by the commission to be sufficient to pay current expenses and allow a reasonable profit. The increase is only an emergency measure, and will remain in effect only six months, or until Aug. 1, 1918, when the rates effective Jan. 1, 1918, will again take effect.

The new rates are: For the first 2,000 cu. ft. per month, per thousand, $1.40, formerly $1.30; for the next 3,000 cu. ft. per month per thousand, $1.25, formerly $1.15, and all in excess of 5,000 cu. ft., $1.10 per thousand, formerly $1. This is only a slight increase when compared to the 15 per cent increase asked for by the company, and still keeps the rate in Janesville much below that in other cities of equal size. Had the 15 per cent increase been granted it would have meant a charge of $1.50 per thousand for the first 2,000 cu. ft., $1.32 per thousand for the next 3,000 cu. ft., and $1.15 per thousand for all in excess of 5,000.

Although the decision makes the new rates effective Jan. 1, it would be next to impossible for the charge for January to be made now as most of the meter readings are made in the middle of each month. It was therefore decided by the commission that the readings should continue the same as formerly and each consumer be compelled to pay the increased rate for six months. That is, if the increased rate went into effect on one consumer Jan. 15, that the old rate would not be again effective until Aug. 15, 1918.

THE STANDARD GAS & ELECTRIC COMPANY has declared the regular quarterly dividend of 1½ per cent on the preferred stock of the company, payable March 15 to stockholders of record Feb. 28.

New Rates At Rockland Effective March 15

The Rockland (Me.), Thomaston & Camden Street Railway has filed with the Maine Public Utilities Commission a revision in its schedule of gas rates, March 15.

First 3,000 cu. ft. per month, $2 per 1,000 ft. (old price $1.75); next 3,000, $1.90; next 4,000, $1.70; next 10,000, $1.50; balance, $1.30.

The above rates are net. If not paid within ten days from date of bill, an additional charge of 10 cents per 1,000 cu. ft. will be made. Prepayment meters set at $2 per 1,000 cu. ft. (old price $1.50). Minimum charge for meters, other than prepayment meters, 50 cents per month (old price, 25 cents).

Indiana Company Authorized to Issue Bonds

The Central Indiana Gas Company is authorized by an order of the public service commission to issue and sell $89,000 bonds at 80 per cent, the money to be used in reimbursing the utility for improvements and extensions already made. The company serves Marion, Muncie, Elwood, Anderson, Hartford City, Alexandria, Fairmount, Riverside and Normal City with gas, both natural and artificial.

Heating and Ventilating Engineer Needed

The New York Civil Service Commission has announced an opening for a heating and ventilating engineer, as follows: Office of the State architect. Salary $1,500 to $2,500 a year. Men only. The position requires technical ability to design and supervise the installation of the different forms of heating and ventilating systems, including power equipment, conduits, air conditioning apparatus, etc., together with a general knowledge of building construction and mechanical equipment, and codes and rules governing them. The examination will presuppose that applicants possess the scientific knowledge necessary for the computation of such equipment, as well as familiarity with practical details. At least five years' experience in the detailing, design or installation of mechanical equipment of buildings, power stations, etc., will be required for admission to the examination. Credit will be given for technical education to an extent not to exceed two years' practical experience. Subjects of examination and relative weights: Written examination, 6; experience, etc., 4. Open to non-residents.

Fort Smith Company Alleges City Violated Law in Fixing Prices

Alleging confiscation of property in violation of the Federal Constitution, the Fort Smith (Ark.) Light & Traction Company filed suit in the United States District Court recently against the city commissioners and city attorney seeking to restrain them from enforcing an ordinance the commissioners adopted a month ago, a note on which appeared in the Feb. 9 issue of the AMERICAN GAS ENGINEERING JOURNAL, fixing the price of natural gas at 17 cents a thousand feet. The company, Jan. 1, increased the price from 15 to 25 cents a thousand, as mentioned in the Dec. 15, 1917, issue of the JOURNAL.

The company alleges the city commissioners in arriving at their figures did not consider the fact that the traction company bought its gas from the Southwestern General Gas Company, its subsidiary. In figuring the company's profit and loss, it is alleged the commissioners accepted only figures dealing with the traction company's gas business when, it is alleged, they should have figured on the combined investment of both companies and their operating expenses and revenue, and on a depreciation of 10 per cent.

Based on a 25-cent rate, the companies combined, allowing a 10 per cent depreciation, would only make 0.48 per cent in the next year, it is charged.

New Jersey Consumers to Pay More for Gas

Under an order issued by the State board of public utility commissioners, all domestic consumers of gas served by the Public Service Gas Company of New Jersey will pay 97 cents, instead of 90 cents, per thousand cubic feet, beginning with the gas bills for February and for the duration of the war. For commercial purposes the minimum charge per thousand cubic feet will be not less than 65 cents.

Kewanee Gas Rates Raised

Permission to increase the gas rate in Kewanee from $1.25 to $1.50 a thousand cubic feet was granted recently by the Illinois State Public Utilities Commission to the Consolidated Light & Power Company. The new schedule provides for a 10 per cent discount for prompt payment of bills. In Princeton the gas rate is $2 per thousand gross with a discount of 25 cents a thousand for cash. In Kewanee further reductions are made in a sliding scale as fixed by the commission.

The new schedule, as allowed by the commission, fixes the gross and net rates at Kewanee as follows:

Amount	Gross	Net
First 1,000 cu. ft.....	$1.50	$1.40
Next 4,000 cu. ft.....	1.40	1.30
Next 10,000 cu. ft.....	1.30	1.20
Next 15,000 cu. ft.....	1.20	1.10
Over 30,000 cu. ft.....	1.00	.90
Prepay meter per 1,000		1.50

Increased Rates at Watertown, N. Y.

The Northern New York Utilities, Inc., of Watertown, has announced an increase in the price of its gas to $1.75 a thousand after March 1. The price now is $1.60 with 10 per cent off if the bill is paid within the month.

Rate Increase Sought by Newton Company

The Newton (Mass.) & Watertown Gas Company seeks permission to increase the net price of gas from 85 to 95 cents per thousand.

By an order issued by the board of gas commissioners on July 12, 1915, the price was designated at 85 cents and it so remains, but because of increased costs, the company petitions the State board to rescind the order now in force and define the advanced price.

A hearing on the petition for prior increase before the gas commissioners was to be held at 603 Ford Building, 15 Ashburton Place, Boston, at 10 a. m., on Friday, March 8. Waltham, with the other cities and towns served by the Newton & Watertown Gas Company, will be officially represented at the hearing.

Rate Increase Sought At Ft. Collins, Col.

Faced with increasing costs in every expense line of their business, while the revenues remained at about the same figure as in previous years, the directors of the Poudre Valley Gas Company, Fort Collins, Col., at a recent meeting authorized the attorneys for the company to petition the State utilities commission for an order permitting the company to adopt a new and slightly higher rate. This petition was filed recently with the commission.

The proposed new schedule of rates provides for the abolition of the present practice of charging one rate for illuminating gas and another for fuel gas. It proposes a basis rate of $1.35 per 1,000 for gas, no matter how used, subject to a 10-cent discount for payment within ten days of date of bill rendered and with a sliding scale to cover quantity discounts to large users.

The new schedule is in effect a reduction of 10 per cent to users of gas for lighting purposes and an increase of 25 per cent to users of gas for fuel purposes. Present rates are based on $1.50 per 1,000 for gas for lighting and $1 per 1,000 for gas for cooking.

The following shows the proposed new rates:

First 10,000 cu. ft. per month, $1.25 net or $1.35 gross per 1,000. Next 10,000 cu. ft. per month, $1.15 net per 1,000. Next 10,000 cu. ft. per month, $1.05 net per 1,000. For all consumption during the month in excess of 30,000 cu. ft., 90 cents net per 1,000.

With the following minimum monthly guarantee:

Five-light meters, 50 cents net or 60 cents gross per month per meter; ten-light meters, 75 cents net or 85 cents gross per month per meter; twenty-light meters or large, $1 net or $1.10 gross per month per meter.

Gas Company Reorganized

The Huntsville Consolidated Gas Company, which was recently sold for the benefit of the bondholders, will now be operated by a new corporation recently formed. T. W. Pratt, E. C. Dillon, Lawrence Cooper, and several other men of the district are in the new corporation.

Municipal Gas Plant For Sale

Contending that the Municipal Gas Plant, Paulsboro, N. J., is not self-supporting, members of the borough council have expressed themselves as being in favor of disposing of it for $75,000, which, they say, is the exact amount the borough has invested. They claim that the town would not only thus rid itself of a great burden, but would save money for the taxpayers. The surplus funds from the plant last year fell far short in defraying the expenses of extensions made to reach families in all sections of the town.

Residents are not only opposed to disposing of the plant, but will fight every effort put forth by council to increase the rate for gas from $1.25 per 1,000 to $1.50, which would greatly assist in defraying the operating expenses.

Temporary Rate Increase Asked for Several New Jersey Cities

The Consolidated Gas Company, which serves Red Bank, Fair Haven, Shrewsbury and Eatontown Townships, Long Branch, Ocean Township, Seabright, Monmouth Beach, Deal, Allenhurst and Asbury Park, N. J., has applied to the State utilities board for permission to increase its rates. The company bases its reason for an increase on the unusual conditions of the labor situation and the price of materials. The increase is asked with the understanding it is to be only temporary. The increase proposed will be a fixed monthly charge to be added to the cost of the gas actually used. To most of the domestic consumers it will mean an added charge of 30 to 40 cents a month.

The utilities board will conduct a hearing on the application at Newark.

Rate Increased at Cheboygan, Wis.

On March 1 the Cheboygan (Wis.) Gas Light Company increased the price of gas. The minimum charge will be 50 cents per month instead of 25 cents as formerly, and $1.60 per 1,000 cu. ft. instead of $1.40. Ten per cent discount for payment on or before the fifteenth of every month remains the same.

20 Cent Increase Announced at Abington, Mass.

The selectmen of Abington received notice recently from the Old Colony Gas Company that after March the price will go up 20 cents per 1,000 ft., which will make the price $1.60 net.

When the franchise was first granted it was stated at the hearing that the price would be $1. When the present company put gas in service they charged $1.35, with a discount that made it $1.25. Later an additonal price was put on and now another one is added.

The company claims expenses and costs are higher and it is not making any profit.

Grand Rapids Gas Rate is Increased 15 Cents

An increase in the net price of gas for fuel and lighting from 80 cents to 95 cents per 1,000 cu. ft. was announced recently by the Grand Rapids (Mich.) Gas Light Company. The new rate will apply to all gas bills on which the discount period expires after April 1, 1918. Officials of the company said the higher cost of everything that enters into the manufacture of gas makes the increase imperative, but they expressed the hope that the higher rate would be necessary only temporarily.

Speaking of the change in rates Secretary Glenn R. Chamberlain said:

"It costs us now 26.7 cents more to make 1,000 ft. of gas than it did when the war began. Our advance to the user, however, is but 15 cents per 1,000 ft., so that we consider we are still bearing a just share of operating expense increase. In dollars and cents the operating expenses for 1918 will be $319,812 more than they would have been had the 1914 cost per 1,000 cu. ft. of gas been maintained. As a sample of what we have had to meet in the way of increased operating expense, I might call attention to the fact that coal, of which we use more than 100,000 tons, has gone up 160 per cent at the mines; oil has increased 200 per cent; gas main pipe, 140 per cent; steel pipe and other steel material, 140 and 250 per cent; meters, 45 per cent pipe fittings, 150 per cent."

Municipal Gas Plant Run at a Loss

The annual report of the Municipal Gas & Electric Light Plant, of Westfield, Mass., shows that the plant has had a successful year, with a net cash balance, but this is not due to the gas plant. It is a foregone conclusion that the price of gas will be raised during the present year, as the increased cost of coal makes this step one that cannot be avoided if the present high standard of the company is kept up.

While the gas plant was operated at a loss, due, no doubt, to the scarcity of coal and the fact that the price of fuel has jumped from $4.45 per ton in January of the past year to $7.66 in November and December of the same years, the electric department more than making up the deficit. Further than this, the gas plant is handicapped by inadequate equipment. Curtailment in the running expense of this branch of the plant is sure to be effective during the present year. Many needed changes could be made in the gas plant with a further degree of efficiency.

Societies and Associations

THE BROCKTON (MASS.) GAS LIGHT COMPANY EMPLOYEES' RELIEF ASSOCIATION held its annual ladies' night, Monday evening, Feb. 19, in Harmony Hall, with a large number of members and guests in attendance. Opening with a short business session of the association, and closing with a minstrel show and dance, the members and their guests found plenty to occupy their minds during the evening. A supper was served in the banquet hall, consisting of salads, cold meats, coffee and ice cream. William P. Morton, president of the association, gave the address of welcome, in which he gave a brief history of the organization, and pointed out that during the past year it had been made into a benefit association, paying sick and death benefits. James P. Moran, as toastmaster, called upon General Manager George H. Priest as the first after-dinner speaker. James Garvin, purchasing agent of the company, responded to a toast to the boys in the service, telling of the nineteen employees of the company who are now in service. Four of these men, he announced, are in France. Assistant General Manager John B. Anderson responded to a toast to the women, speaking in a happy vein, interjecting plenty of witty remarks. At the conclusion of the speechmaking all rose and sang "The Star-Spangled Banner." All present adjourned to the lower hall, where James P. Moran promised he would provide an entertainment. When the members and guests had been seated the announcement was made that "The Charge of the Light Brigade" was to be enacted. The minstrel show followed, after which music was provided for dancing by the association's orchestra. The program was arranged by the entertainment committee, consisting of J. B. Anderson, Mark Fitzmaurice, W. A. Jodoin, James P. Moran and W. P. Morton.

THE PACIFIC COAST GAS ASSOCIATION held its first get-together dinner of the present season at Los Angeles, Cal., on the evening of Saturday, Feb. 16, and once more it is our pleasure to record a most successful evening's entertainment afforded by our brethren of the southland, writes F. S. Myrtle, of the Pacific Gas & Electric Company. One hundred and fifty-five representatives of the gas industry on the Pacific Coast sat down to an enjoyable feast in the banqueting room of the Hotel Alexandria. Naturally, the local men were most in evidence, but there was a goodly attendance from outside districts. "Pacific Service" was represented by John D. Kuster, the association's president, Leon B. Jones, Van E. Britton, M. L. Neely and F. S. Myrtle. Two past-presidents from the north attended, Frank A. Cressy, Jr., of Modesto, and C. B. Babcock, of San Francisco. President Kuster was in the chair and acquitted himself most worthily as toastmaster. A new feature of entertainment was an orchestra of twenty-eight pieces, wholly composed of employees of the Los Angeles corporation and most of these from its gas works. This orchestra was inaugurated some little time ago at the annual dinner of the company's employees, and its progress has been remarkable. According to a new established custom our hosts provided some vocal and dancing features. A number on the evening's program worthy of especial mention was furnished by Frank Terramore, of the U. S. N. R. camp at San Pedro, who sang several selections. Van E. Britton was in charge of the entertainment program, and, besides, did good service as an accompanist. The dinner was followed by the usual speechmaking. William Baurhyte, representing the Los Angeles Gas & Electric Corporation, tendered hearty welcome to the guests. C. B. Babcock spoke for the selling end of the gas industry, and earnestly advocated activity on the part of the gas corporations in promoting the sale of gas appliances. A. B. Day and F. S. Wade, both of Los Angeles, and D. J. Young, of San Diego, told of the equipment work being done by the gas companies at the military and naval training camps. An interesting talk was given by Leon B. Jones upon his trip East, where he conferred with the Ordnance Department in Washington upon the production and supply to the United States Government of trinitrotoluol. A stirring address was made by C. N. Luckenbach, of Los Angeles, upon the necessity for every man, whether of service age or not, doing his "bit" in the great cause for which the nation is now fighting, with particular application to the "slacker." John Redd, formerly of "Pacific Service," and now engaged in the appliance industry in Los Angeles, contributed happily to the speechmaking program, and the writer, in his capacity of publicity man, responded to the usual call for some "observations." It was announced that the next get-together dinner will be held in San Francisco on the evening of June 15. Preparations are now in order for the annual convention of the association, which is to be held in Los Angeles during the third week of September. It is understood that, provided satisfactory arrangements can be made, the Beverly Hills Hotel will be the scene of the week of mingled business and pastime.

THE HARRISBURG (PA.) GAS COMPANY recently held the monthly meeting of the commercial department, a department which includes all the clerical help. "Telephone Service" was the topic discussed. H. E. Prevost, of the Bell Telephone Company, gave an informal talk on the subject, bringing out the necessity for courtesy on the part of operator and customer. In the general discussion W. H. Fetter, local manager of the Bell Company; A. M. Boyd, of the United Gas Improvement Company, Philadelphia, and L. S. Williams, manager of the Harrisburg Gas Company,

took part. At the smoke, which followed, Corporal Mountz, son of Daniel Mountz, an employee of the company, related some entertaining incidents of army life at Camp Hancock. It was announced that the annual social for the employees of the department and their friends will be held some time in March. This is an annual affair given by the company, and it is always eagerly looked forward to by members of the department.

Personal Notes

ERNEST R. GIBBONS, who has been with the Middletown (Conn.) Gas Light Company for a number of years, has been elected superintendent, succeeding E. C. Weston, at the recent annual meeting.

J. H. MALIN, recently general foreman of the distribution department of the Omaha (Neb.) Gas Works, has been appointed general foreman of the gas department of the Winnipeg (Canada) Electric Railway Company.

J. E. ELSON, of Denver, Col., has been appointed plant superintendent of the Lebanon (Pa.) Gas & Fuel Company, succeeding A. R. Taylor, who resigned.

JOSEPH F. GUFFEY, general manager of the Equitable Gas Company, Pittsburgh, Pa., has recently been elected president to succeed James H. Reed, who resigned.

SAMUEL BALL, who was appointed to succeed A. L. Wilkinson on the board of the Michigan Gas Association, as mentioned in the June 9, 1917, issue of the AMERICAN GAS ENGINEERING JOURNAL, has also been appointed vice-president of the association to fill the vacancy caused by Mr. Wilkinson's resignation.

WILL W. BARNES, secretary of the Manufacturers' Section of the National Commercial Gas Association, has severed his connections with Bayley & Sons, 101 Park Avenue, New York City, and has taken up the same field of endeavor on his own account. He is now located at 31 Chelsea Place, East Orange, N. J.

R. G. PORTER, who has been with the American Gas Company, Rockford, Ill., for the past three years as engineer, has resigned and is now in charge of a large engineering project at Chester, Pa.

LEE CHAMBERLAIN, secretary and director of the Lansing (Mich.) Fuel & Gas Company, and formerly identified with the Detroit City Gas Company in the capacity of industrial sales superintendent, has been appointed sales manager of the Standard Fuel Appliance Company, Detroit.

THE SURFACE COMBUSTION COMPANY, manufacturers of industrial furnaces, with offices at Wilbur Avenue near Sunswick Street, Long Island City, N. Y., has announced that on April 1, 1918, they will be located at 366-368 Gerard Avenue, New York City, where, with increased space and new equipment, they will be in a better position to take care of their rapidly increasing business.

THE ELKTON (MD.) GAS IMPROVEMENT COMPANY, at a meeting recently, organized by electing the following officers: DeLancey Scott, president; William Sterling Evans, vice-president; Charles Adams, of Philadelphia, secretary; Irvin T. Kepler, treasurer. The officers with Mr. Hudson, of Philadelphia; Frank T. Whitney and Charles Gatchell, comprise the board of directors. The new company will take over the plant, franchise, etc., of the Elkton Gas Company, but as yet the new plans have not been made public.

F. L. MARSHALL, manager of the Gas Light Company, of Augusta, Ga., has been elected president of the Board of Commerce at the recent meeting of the 1918 Commissioners. Mr. Marshall is a Virginian and has been a resident of Augusta since July, 1914. He stands at the forefront in his calling and is now president of the Southern Gas Association. Mr. Marshall is a man of high ability, and quickly won the regard and confidence of Augustans. He has become prominent in the movements put on for Augusta's advancement, and is familiar with the work of the Board of Commerce and with its ambitions for the year just set in.

E. H. NEGLEY, manager of the Canton (Ill.) Gas & Electric Company, was recently elected president of the Canton Commercial Club.

JOHN DOHERTY, thirty-two years old, of 650 Wythe Avenue, Brooklyn, N. Y., a gas maker for the Brooklyn Union Gas Company's Williamsburg branch, died recently. Mr. Doherty was born in Newmarket, County Cork, Ireland.

THE CINCINNATI (OHIO) GAS & ELECTRIC COMPANY at the annual meeting of stockholders recently elected two new directors. George W. Noyes was elected to the vacancy caused by the death of William H. Stewart. R. K. LeBlond was elected to succeed Charles L. Harrison, who resigned because of pressure of other affairs. Other directors re-elected were Charles D. Jones, Rufus B. Smith, Samuel Assur, Edward H. Ernst, H. W. Lothmann, Alfred M. Cohen, Charles F. Windisch, Charles P. Taft and M. E. Moch.

E. C. WESTON was elected secretary and treasurer of the Middletown (Conn.) Gas Light Company to fill the vacancy caused by the death of Henry L. Mansfield at the recent annual meeting. Mr. Weston was formerly superintendent of the company.

Construction Notes

Extensive Improvements Contemplated at Charleston, S. C.

The Charleston (S. C.) Consolidated Railway & Power Company plans to expend a considerable sum of money in the near future in expansion of its power facilities and gas plant, this announcement being made by President P. H. Gadsden, who has just returned from Washington, where he is giving much of his time to his duties as representative of the public utilities of the nation engaged in war work. The Consolidated officials are looking ahead to a much increased demand upon their facilities, and will be prepared to take care of a maximum load after their improvements are completed. Besides other plans, which the company is not yet ready to make public,

the putting into commission of the old power house on Meeting Street will be one method of adding greatly to their power production. Another prospect is the increasing of their gas plant capacity by at least a third, so as to be able to take care of not only present large demands, but those of the near future, which a fast-growing population is certain to require.

It has not yet been decided just which of the two gas plants will be expanded, whether it will be the water or the coal gas generators. An expert will report on this problem shortly, and whatever is decided, improvements will then be taken up. This will mean Charleston's gas output daily will be speeded up to some 3,000,000 cu. ft.

Tank with 6,000,000 Cu. Ft. Capacity to Be Built at Baltimore

To meet its increased needs the Baltimore (Md.) Gas & Electric Company is prepared to build a new gas tank in the Spring Garden section. The tank will have a capacity of 6,000,000 cu. ft.

The cost is placed at nearly $500,000, and to cover its construction the company has made application to the public service commission to issue notes for $468,000.

The notes are to be for three years at 6 per cent, and are to be secured by 5 per cent bonds. The Fidelity Trust Company and Robert Garrett & Sons have arranged to take over the entire issue. The Bartlett-Hayward Company is to construct the tank.

Plans Completed for Enlargement of Junction City, Kan., Plant

The Junction City Gas Company has plans under way for the enlargement of their Junction City plant, and as fast as the new equipment arrives it will be installed.

D. Hollingsworth, of Taylor, Tex., arrived in Junction City, Kan., recently to be in charge of the distribution and service of the company. He is a practical man and is in charge of the new work.

The pipe is expected now any day for an extension for the big main for a distance of over 1½ miles. This will be installed as soon as it arrives and will enable many to use gas.

Improvements to be Made at Owego, N. Y.

A. J. Clary, an expert in the analysis of coal gas and the by-products formed in its manufacture, spent several days in Owego, N. Y., recently in the interests of the Empire Gas & Electric Company, of that city. Plans are under way for utilizing some of these by-products with the view of increasing the present plant and improving the quality of the service.

Niagara Company Ready to Begin New Main

The construction of the main to be laid by the Niagara Light, Heat & Power Company along the River Road for the supply of gas which the company will secure from the Semet-Solvay Company in the town of Tonawanda for distribution to its consumers in the Tonawandas will be started just as soon as the weather conditions will permit. The mild weather of the past week raised the hopes of the company that the construction of the line might be made possible earlier than it was expected.

The first carload of the pipe that will be used in the construction of the main has arrived. The company has eleven carloads of material on the way from the factory and these are expected to arrive in time to be available as soon as it is possible to begin digging the trench that will be made for the main.

New Retorts and Other Improvements Tend to Increase Portland Output

That the past fiscal year has been one of increased costs, due to greater cost of labor and material, and that this has been provided for in no small degree by more economic methods, is pointed out in the annual report of the president, Col. Fred. N. Dow, to the stockholders of the Portland (Me.) Gas Light Company presented at the recent annual meeting. The company during the past year manufactured over 400,000,000 cu. ft. of gas as compared with approximately 364,000,000 cu. ft. in 1916.

Untoward circumstances predicted in the last report of the president have affected the business of the company, resulting in a marked increase in the cost of labor and material entering into their products. That increase was not provided for by raising the price of gas, but it was in a measure met by more economical methods made possible by their comparatively new retorts and other improvements. Increased production contributed also through the enlargement of the factor for the distribution of overhead and other fixed charges. Thus the gas manufactured last year was over 400,000,000 cu. ft., as against 364,000,000 cu. ft. in 1916. In this connection it may be interesting to note that the great increase in the annual amount of gas manufactured during the past ten years, namely, an excess of 238,202,000 cu. ft. in 1917 over that of 1907, has been attended with but a trifling increase of overhead charges. Such cannot be said, however, of the taxes paid by the company. In 1907 they were $4,780, in 1917 $24,204.

Because of its prohibitory cost comparatively little was done during the year by way of making extensions. About three-quarters of a mile of new mains were laid and less than 300 ft. of old mains were renewed. This work cost $4,887; a few years ago it might have been done for $2,000.

Westerly Company to Lay Gas Mains

The work of installing the new gas mains will commence as soon as the weather will permit, says Martin H. Spellman, manager of the Westerly (R. I.) Light & Power Company. The oakum for use in connection with the piping is expected to arrive soon. The pipe for the mains will be dropped along the line where it is to be installed as soon as it arrives.

Application Filed to Construct Main at Long Beach, Cal.

Application for the construction of a 6-in. gas main under Cerritos slough at Water Street, Long Beach, Cal., has been made to the United States engineer's office in Los Angeles. A map showing the location of the proposed main is on exhibition in the office at 725 Central Building.

San Diego Rates Increased

The San Diego (Cal.) Consolidated Gas & Electric Company has been authorized by the railroad commission of California to place in effect increased rates for gas service averaging 27 per cent.